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ABSTRACT

This study used data on 120,032 people from the 1991 National Health Interview Survey to assess prevalence of disabilities among racial and ethnic minority groups. It examined the status of racial/ethnic minority persons in the following four disability categories: (1) chronic health conditions; (2) physical, sensory, and language impairments; (3) mental disorders; and (4) nervous disorders. It related these categories to a number of reference variables including gender, age, education, family income, marital status, employment, and geographic region. Among findings were the following: African American males have higher percentages of mental and nervous disorders than other males; there is an overrepresentation of African and Hispanic Americans in all four disability categories; and a large number of minority persons with disabilities are in the working-age population. A tendency was found for minority persons across disability categories to be at the bottom of the economic ladder. Policy recommendations include the need for outreach efforts to people with disabilities in minority populations and provision of culturally appropriate services by vocational rehabilitation professionals. Specific data charts are included in the appendix. (Contains 34 references.) (CR)

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PREVALENCE OF DISABLING CONDITIONS AMONG DIVERSE RACIAL/ETHNIC GROUPS IN THE UNITED STATES

Sylvia Walker
R. C. Saravanabhavan
Charles Asbury

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Howard University Research and Training Center

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Preface

An earlier study (Asbury, Walker, MaHolmes, Rackley, & White, 1991) conducted by the Howard University Research and Training Center (HURTC) led to the following conclusions. Racial/ethnic minority persons with disabilities, especially African Americans, American Indians, and persons of Hispanic origin disproportionately outnumber White persons with disabilities. A large number of minority persons with disabilities are unemployed, older, and under-educated. In addition, on average, they had lower family income than their White counterparts. These conclusions are further substantiated by a report from the Bureau of the Census (McNeil, 1993) which indicated a continuing trend of persons in minority groups being overrepresented among persons with disabilities. For example, when rates of severe disabilities were examined for the population 15 to 64 years of age, African Americans (12.7%), American Indians (11.7%), and persons of Hispanic origin (9.1%) had significantly higher rates than White Americans (7.4%). According to the Bureau of the Census (McNeil, 1993), there were 24.1 million people with severe disabilities among whom 55% were 15 to 64 years old, 43% of them were 65 years or older, and only 2.2% of them were under 15 years of age. These percentages indicate higher proportions of persons with disabilities among older age groups. The percentage of females (58.83) among persons with severe disabilities was found to be far higher than that of males (41.17). A report from the Census Bureau (McNeil, 1993) confirmed the strong association between less education and greater likelihood of having a disability, and similarly, lower income and more likelihood of having a disability.

A number of authors (Bowe, 1991a, 1991b; Joe, 1988; O'Connell, 1987; Thornhill, HoSang, Hart, & Rivera, 1991; and Wright & Leung, 1993) have alerted us to the disproportionate increase in disability rates among minority persons. These investigators have drawn attention to the need for ongoing research and subsequent policy changes to facilitate more effective services for racial/ethnic minority persons with disabilities.

The present study was carried out with the objective of continually assessing the demographic and disability characteristics of racial/ethnic minority populations in order to inform consumers, service providers, researchers, and policy makers. Current data on the disability and demographic characteristics of racial/ethnic minority groups, made available in a convenient and readily accessible form, are essential to plan and develop appropriate programs to meet the needs of persons with disabilities in these groups. The purpose of the current study was to determine and update the prevalence of disabilities among ethnic minority groups. The major source of information for the current study was the 1991 National Health Interview Survey (NHIS) conducted by the Center for Health Statistics.

The current study examines the status of racial/ethnic minority persons in four disability categories (chronic health conditions; physical, sensory, and language impairments; mental disorders; and nervous disorders) from a number of perspectives. Following the exploration of a number of reference variables (including gender, age, education, family income, marital status, employment, and geographic region), the study concludes with a discussion of several policy implications.

From birth, the individual is faced with ever increasing demands relative to cognitive, social, and psychological functioning, and ultimately the

fulfillment of expected adult roles. Mastery of these tasks is especially difficult for the person with a congenital or acquired disability. Minority status and/or low socioeconomic status are additional compounding variables for large numbers of individuals in the United States and elsewhere. Given the compounding effects of minority group status, economic hardship, and disability, it is essential that the unique needs of minority persons with disabilities be addressed. Persons with disabilities from diverse cultural/racial groups are an underutilized resource in America. A great deal of attention has been given to the fact that the United States must compete in the global economy in order to maintain its leadership position. As we approach the end of the 20th Century, people with disabilities (including those who are members of minority groups) ask for the opportunity to be recognized as human beings who have the capacity to love, to share, to create, to work, to live fruitful lives, and to contribute to society. The challenge for America is to create the environment for all persons with disabilities to do so. The passage of the Americans with Disabilities Act (ADA), the Individuals with Disabilities Education Act (IDEA), and the 1992 Amendments to the Rehabilitation Act lay the foundation for the attainment of maximum potential by all persons with disabilities.

This report is founded on the principle that all individuals can benefit from the implementation of relevant research and appropriately designed special education, rehabilitation, and related services (no matter where they reside, their ethnic identity, or the severity of their disability and/or economic status).

Sylvia Walker, Ed.D.

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This publication is dedicated
to the memory of
Mr. J. Rochlin
Former Executive Director of the
President Committee on Employment of People with Disabilities

Prevalence of Disabling Conditions Among Diverse Racial/Ethnic Groups in the United States

Introduction

Minority persons with disabilities (including African Americans, Hispanic Americans, Native Americans, Asian Americans, and Pacific Islanders) continue to represent a substantial proportion of the population with disabilities. Therefore, there is a need to update the prevalence of disabling conditions and the demographic characteristics of individuals with disabilities in various racial/ethnic groups. Such an assessment will yield a comprehensive picture of persons with disabilities within each racial/ethnic group and their comparative status across all racial/ethnic groups. Furthermore, (a) specific types of disabilities may be documented among ethnic minority groups in proportion to their representation in the population, and (b) the unique demographic characteristics of each racial/ethnic group may be identified.

The Howard University Research and Training Center (HURTC), in keeping with its objective of determining the relative prevalence of various disabling conditions among racial/ethnic minority persons with disabilities, conducted a study and disseminated its findings in 1991 (Asbury, Walker, MaHolmes, Rackley, & White, 1991). The study led to the following conclusions. Race/ethnic minority persons with disabilities, especially African American, and persons of Hispanic origin have higher rates of disability than White Americans. A large number of minority persons with disabilities are unemployed, older, and under-educated. In addition, on average, they had lower family income than their White counterparts. These conclusions were further substantiated by a report from the Bureau of the Census (McNeil, 1993) which indicates a continuing trend of persons in

minority groups being overrepresented among persons with disabilities. For example, when rates of severe disabilities were examined for the population 15 to 64 years of age, African Americans (12.7%), American Indians (11.7%) and persons of Hispanic origin (9.1%), had significantly higher rates than Whites (7.4%). According to the Bureau of the Census (McNeil, 1993), there were 24.1 million people with severe disabilities among whom 55% were 15 to 64 years of age, 43% of them were 65 or older, and only 2.2.% of them were under 15 years of age. These percentages indicate higher proportions of persons with disabilities among older age groups. The percentage of females (58.83) among persons with severe disabilities was found to be far higher than that of males (41.17%). The Census Bureau report (McNeil, 1993) also confirms the strong association between less education and greater likelihood of having a disability, and similarly, lower income and more likelihood of having a disability.

A number of authors (Anderson, 1986; Bowe, 1985a, 1985b; Cummings, Huntley, Kelley, & Varney, 1986; Joe, 1988; O'Connell, 1987; Thornhill, & Torres, 1986; and Wright, & Leung, 1993) have alerted us to the disproportionate increase in disability rates among minority persons. These investigators have drawn attention to the need for ongoing research and subsequent policy changes to facilitate more effective services for racial/ethnic minority persons with disabilities. Based on these recommendations, the present study analyzed the current status of persons with disabilities from minority racial/ethnic groups. The main objective of this study was to determine and update the prevalence of disabilities among racial/ethnic minority groups. The major data source was the 1991 National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics.

Review of Related Literature

Status of African Americans with disabilities

African Americans represent a large segment of the population with disabilities in the United States. African Americans comprise nearly 13% of the 48.9 million persons with disabilities and about 16% of the 24.1 million persons with a severe disability in the U.S. (McNeil, 1993). These percentages clearly indicate that African Americans are over-represented in the population of persons with disabilities compared to their proportion in the total population (12.3%). Bowe (1985a) reported that one out of every seven African Americans had a work disability. Among working-age African Americans with disabilities, women (53.9%) outnumbered men (46.1%).

Thornhill, & HoSang (1988) reported that the prevalence of disability related illnesses and chronic health conditions was higher among African Americans than other ethnic groups. This finding was confirmed by a study (Asbury et al., 1991) which revealed that African Americans were represented in higher percentages in the following disability groups: (a) chronic health conditions, (b) physical, sensory, and language impairments, (c) mental disorders, and (d) nervous disorders. According to this study, African American females were more at risk for chronic health conditions while African American males were at greater risk for the other three disabling conditions mentioned above.

According to Gary (1993), African American men have higher mortality rates in comparison to other groups in our society. African American men are more than twice as likely as White American men to contract diabetes, nephritis or nephrotic syndrome, septicemia, as well as drug and alcohol-related causes. They were more than three times as likely to die

from acquired immune deficiency syndrome (AIDS). African American women also appeared to be disproportionately represented among people with AIDS. According to All and Fried (1994), African American women constituted 52% of all women with AIDS in the country.

In both public and private agencies, the percentage of persons with physical, sensory, and language impairments (i.e., amputation, blindness, hearing impairment, orthopedic impairment, speech impairment, and visual impairment), among African Americans, was two and sometimes three times the proportion for the other ethnic minorities. Specifically, African Americans had the highest prevalence rates for particular physical, sensory, and language impairments (i.e. blindness, visual impairments, orthopedic impairments, and amputation) among all ethnic minority populations across the South, Northeast, and Mid-Atlantic geographic regions. Furthermore, African Americans also had the highest prevalence rates in the Midwest region for all physical, sensory, and language impairments except visual impairments (Walker et al., 1986).

Status of Hispanic Americans with Disabilities

The Hispanic population is a widely diverse segment of the American population. Their racial composition includes both Blacks and Whites. Currently, 22 million people, or approximately 9% of the U. S. population, are of Hispanic descent. Mexican Americans, or Chicanos, account for approximately 12 million or 54.5% of the Hispanic American population. Approximately, 45.2%, or roughly 10.1 million Hispanic Americans reside in the Western region of the U. S. The remainder are in the Northeastern (16.8%), Midwestern (7.7%), and Southern (30.3%) regions of the U.S.

Like African Americans, when compared to the general working-age U. S. population, Hispanic Americans tend to experience many disadvantages

(Bowe, 1991; Leal-Idrogo, 1993). In 1988, Hispanic Americans tended to have a higher unemployment rate than the working-age population overall (8.1% vs. 5.7%), particularly among males (9% vs. 6.2%). They tended to have lower income from year round full-time work ($19,413 vs. $25,662), and, of those who worked at any point during 1987, the mean income was $14,440 compared to $18,951 for the working age population overall and $19,482 for White Americans.

It is essential to note that Hispanic Americans with disabilities constitute the fastest growing segment of the working-age ethnic minority population with disabilities in the United States. According to Bowe (1985b), one out of every 12 Hispanic Americans had a work related disability. Hispanic Americans, who constitute 9% of the total population, account for nearly 7% of the 48.9 million persons with a disability and about 8% of the 24.1 million persons with a severe disability in the U.S. (McNeil, 1993). It should be noted that a substantial number of persons of Hispanic origin are undocumented. Therefore, the percentage of Hispanic Americans with disabilities is likely to be higher than was indicated by the U.S. Population Census.

A study conducted by the Howard University Research and Training Center (Asbury et al., 1991) revealed overrepresentation of African Americans and Hispanic persons with chronic health conditions in comparison to Whites. In the physical, sensory, and language impairments category, a significant number of Hispanic persons were found at the 25-34 age range. Similarly, the largest number of Hispanics with mental disorders (36.4%) was observed in the 17-24 age range compared to the large percentage of African Americans (32.4%) that was seen in the 25-34 age group. Earlier studies that focused on Hispanic persons with disabilities have revealed a high

prevalence of mental disorders in this population (Acosta, 1977; Asbury et al., 1991). For example, research conducted by Adams, Dworkin, and Rosenberg (1984) revealed that Hispanic persons had a higher incidence of affective disorders and "other psychoses."

Status of American Indians with Disabilities

According to the 1990 U.S. Population Census, there were 1.96 million American Indians (49.3% male and 50.7% female). Nearly 50% of all American Indians live in rural areas. Although American Indians comprise less than 1% of the total population, they have the highest overall disability rate (21.9%) compared to all racial/ethnic groups in the country (McNeil, 1993). Among those who have severe disabilities, American Indians rank the second highest with a 9.8% prevalence rate, as compared to African Americans who have a 12.2% prevalence of severe disabilities (McNeil, 1993). American Indians continue to be overrepresented among persons with disabilities. In addition, American Indians with disabilities lack easy access to federal, state, and local services due to distance, cultural, and sometimes, language problems (O'Connell, 1987; Joe, 1988).

There are approximately 500 federally recognized American Indian tribes and Alaskan Native villages. These tribes and native villages vary in size, population, language, religious practices, economic activities, and geographic location. Nevertheless, American Indians as a sub-population share common characteristics in the areas of education, health, employment and income. American Indians, in general, have lower economic status and educational attainment compared to other racial/ethnic groups. Among persons who were 25 years or older, only 55.8% of American Indians were high school graduates compared to the national high school graduate rate of 66.5%. In addition, American Indian students had a higher school dropout

rate. In 1988 for example, 35.5% of American Indian students dropped out compared to 28.8% for the U.S. population (National Center for Education Statistics, 1988). American Indians living on or off the reservations are in poorer health conditions compared to the general population. Disproportionately higher rates of mortality, suicide, alcohol abuse, mental health problems, diabetes, heart disease, cancer, cirrhosis, and visual impairments have been reported for American Indians (O'Connell, 1987; Hodgekinson, 1992; Indian Health Service, 1990; Saravanabhavan, Martin, & Saravanabhavan, 1994).

The unemployment rate, especially for those who live on reservations and Alaskan native villages, is much higher than the general population (U.S. Bureau of the Census, 1983; 1990). For the most part, American Indians living on reservations or in urban areas have lower incomes compared to the general population. Poor economic conditions are more pronounced for American Indians with disabilities. In recent studies conducted by the American Indian Rehabilitation Research and Training Center, 40 to 50 percent of American Indian persons with disabilities living in Denver, Minneapolis, and Dallas reported annual incomes of less than $5,000, (Marshall, Johnson, Martin, & Saravanabhavan, 1990; Marshall, Day-Davila, & Mackin, 1992; Schacht, Hickman, & Klibaner, 1993).

Despite the fact that they have a higher prevalence of disabling conditions, American Indians are less likely to seek vocational rehabilitation services and are less likely to be successfully rehabilitated compared to the general population (O'Connell, 1987; Marshall, Johnson, Martin, Saravanabhavan, & Bradford, 1992). Although the Rehabilitation Act has authorized reservation-based tribally operated vocational rehabilitation projects and specialized services such as the use of native healers, these

projects and services are inadequate in number. There are only about 15 tribal vocational rehabilitation projects in the country. These projects face stiff challenges. They are severely under-funded and they often face acute shortages of qualified personnel and training (Lonetree, 1990; Martin & O'Connell, 1986).

Status of Asian Americans/Pacific Islanders with Disabilities

Asian and Pacific Islanders represent 3.12% of the total U.S. population. This sub-population consists of at least 28 ethnic groups with diverse cultures and languages. Among the 48.9 million persons with a disability in the country, 1.59% are Asian/Pacific Islanders. This population has been reported to have the lowest prevalence rate of disabilities compared to all other groups (McNeil, 1993). However, data on their health risks and morbidity patterns are scant (Wright, & Leung, 1993). Little research has been conducted with regard to specific disabilities, and the needs of Asian American and Pacific Islanders. Nevertheless, the information which is available on their health status is less than encouraging. For example, according to Gall, and Gall (1993), 5 - 15 percent of Asian Americans are chronically infected with hepatitis B in comparison to only one percent in the general population. Infected individuals are 300 times more likely than non-infected persons to develop liver cancer and are at higher risk to develop cirrhosis and hepatoma. Asians and Pacific Islanders have 11.81 cases of malaria per 1000 people in contrast to .15 White American, .68 African American, and .33 Hispanic American cases per 1000 persons. In addition, tuberculosis is growing among Asian Americans and Pacific Islanders at a rate of five times that of the population in general.

Based on information available at the Howard University Research and Training Center, educational attainment by Asian Americans and Pacific

Islanders has been traditionally high. A further examination of education and income indicates, (despite the relatively high educational levels of Asian Americans and Pacific Islanders), a higher percentage of persons in these groups (11%) live in poverty than White Americans (8%). It should also be noted that subgroup differences show that some Asian and Pacific Islander groups have a significantly lower proportion of higher education (i.e. Vietnamese, Pacific Islanders, Cambodians).

Summary

In summary, persons with disabilities who are also members of minority racial/ethnic groups "face a double discrimination and a double disadvantage in our society" (Wright, & Leung, 1993, p.1). Existing literature amply illustrates that minority persons with disabilities are more likely to be poor and undereducated. There is additional evidence (Asbury et al., 1991) that minority persons with disabilities are represented disproportionately at the lower end of the economic spectrum than their European American counterparts. Future trends demand improvement of educational preparation of all persons with disabilities, and implementation of strategies which improve their health and employment status (Asbury et al., 1991). Critical first steps that must be taken at this point are: (a) on-going research and documentation of the prevalence of various disabilities, and (b) identification of causes and possible solutions for such high rates of disabilities among minority persons.

Statement of the Problem

The purpose of this study was to examine and update the prevalence of disability and the association between racial/ethnicity and selected demographic variables across the types of disabilities. More specifically, the study attempted to ascertain the number of individuals with disabilities

(within various racial/ethnic groups), and the types of disabilities they had. In addition, the study examined selected demographic characteristics of individuals with disabilities in relation to each racial/ethnic group as well as each type of disability. In this report, the term disability is used broadly to refer to: (a) chronic health conditions, (b) physical, sensory, and language impairments, (c) nervous system disorders, and (d) mental disorders.

Objectives of the Study

The following are the objectives of the study:

1. To review and update prevalence data on disability rates among major racial/ethnic groups in the United States (including African Americans, Hispanic Americans, Native Americans, Asian Americans and Pacific Islanders).

2. To review and update prevalence information relative to various kinds of demographic distribution for selected types of disabilities among racial/ethnic minority groups in the United States.

3. To document the extent of association between racial/ethnicity and selected demographic variables within each of four types of disability categories.

Research Questions

In this study, the conceptual framework was operationalized by translating the objectives into the following research questions:

1. What are the specific disability rates among racial/ethnic minority populations compared to Whites?

2. What are the specific disability rates for racial/ethnic groups (including Whites) according to geographic region (Northeast, West, Midwest, and South)?

3. What are the specific disability rates for different types of disability among racial/ethnic minority groups in the United States?

4. What are the relationships among the specific types of disability and the demographic characteristics such as age, family, income, sex, marital status, education, employment, and geographic location?

Definition of Terms

Affective psychosis: A disorder characterized by a disturbance of mood, accompanied by a full or partial manic or depressive syndrome that is not caused by any other physical or mental disorder.

Age: Age at last birthday.

Chronic conditions: Conditions that either (a) were first noticed three months or more before the reference date of interview, (b) belong to a group of conditions that are considered chronic regardless of when they began or, (c) are the type of conditions that obviously have a duration of more than three months.

Disability: A general term which, in this study, refers to any long or short-term reduction of a person's activity or function as a result of acute or chronic physical or mental limitation.

Distribution: Allocation of and accounting for the occurrence of disability on the basis of categorical subdivision and stratification (i.e. the frequency of occurrence in a designated area, class, or level).

Employment status: Employment status is divided into three categories: "not in labor force," "employed," and "unemployed." Employment includes paid work as an employee of someone else, self-employment in business, or professional practice, and unpaid work in a family business or farm. Respondents who are "not in the labor force" are those who are (a) receiving revenue from an enterprise, but not participating in its operation, (b) doing housework or charity work for which they receive no pay, (c) seasonal workers during the portion of the year they were not working, (d) not working, even though they have a job or business but are on layoff. Unemployed respondents were those not receiving income from sources listed previously under "employed."

Family income: The total of all income received by the respondent's household during the 12 month period preceding the week of the interview. Income from all sources (wages, salaries, rents from properties, pensions, and help from relatives) are included.

Geographic region: The states under study were grouped into four regions. They are Northeast, Midwest, South, and West. (a) *Northeast:* Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania; (b) *Midwest:* Ohio, Illinois, Indiana, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Kansas, and Nebraska; (c) *South:* Delaware, Maryland, District of Columbia, West Virginia, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Oklahoma, Arkansas, and Texas; and (d) *West:* Washington, Oregon, California, Nevada, New Mexico, Arizona, Idaho, Utah, Colorado, Montana, Wyoming, Alaska, and Hawaii.

Marital status: Respondents were grouped into six categories of marital status: (a) married - spouse in household, (b) married - spouse not in household, (c) widowed, (d) divorced, (e) separated, and (f) never married.

Mental disorders: A clinically significant behavioral or psychological syndrome typically associated with distress or impairment of function. The mental disorders selected for inclusion in the present study are schizophrenia, affective psychosis, and "other" psychoses.

Nervous disorders: Pathological chronic degenerative conditions originating in the central nervous system. This study focused on the following nervous disorders: mental retardation, epilepsy, cerebral palsy, Parkinson's disease, multiple sclerosis, and "other" disorders.

"Other" psychoses: In the present study, this category includes Alzheimer's disease, senile dementia, involutional melancholia, and pure paranoia.

Physical, sensory, and language impairments: A chronic or permanent condition, usually static in nature, that results from disease, injury, or congenital malformation. It represents an absence, decrease in or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs.

Prevalence: The extent and general widespread existence of a single health condition or class of conditions which are known to be disabling or to contribute to the eventual development of a disability.

Race: Racial classification is based on the respondent's description of his/her racial or ethnic background. For the purpose of this study, the population is divided into four groups, "White American," "African

American," "Hispanic American," and "Other." "Other" includes American Indians, Asian Americans and Pacific Islanders.

Schizophrenia: A mental disorder in which a deterioration from a previous level of functioning is observed. This condition is not due to an affective or nervous disorder and onset is prior to age 35 with patients often reporting delusions, hallucinations, or thought disturbances.

Criteria for Variable Selection

In this investigation, the term "disability" was operationalized using (a) chronic debilitating health conditions, (b) physical, sensory and language impairments which hinder or interfere with "normal" or usual functioning, (c) nervous disorders, and (d) mental disorders. Selection criteria was further refined by selecting and including specific conditions, impairments, nervous and mental disorders. The following are criteria for selection of conditions and impairments, and demographic variables:

Chronic condition. A health condition was included if it was chronic and its adverse effect on normal function was generally presumed to be progressive over time. The condition must also have a high incidence of occurrence in the general population and must be in a category where at least 70% of persons having the condition are required to see a physician on a regular basis.

Impairment. This category was based on the criteria that the existence of the impairment must be behaviorally apparent when elicited or otherwise observed, although not necessarily degenerative to the point of requiring regular care by a physician. There must also be a relatively high incidence of occurrence of the impairment in at least one or more ethnic subgroups to the point of restricting or impeding activity on an average of 18 days per year.

Demographic variables. All demographic variables were included primarily on the basis of their relevance to the objectives of the study and the research questions as stated.

Variable Types

In this study, there are two sets of variables. The first set was labeled, "Focal Group Variables," and the second was called "Reference Variables." The focal group variables were chronic health conditions, impairments, nervous disorders, and mental disorders. The reference variables were age, sex, income, education, employment, marital status, geographic region, and racial/ethnicity. The focal group variables were further sub-divided to include the following: (a) seven types of chronic debilitating health conditions: *heart disease, cerebrovascular disease, respiratory disorder, arthritis, intervertebral disc disorders, diabetes, and high blood pressure;* (b) six types of physical, sensory, and language impairments: *hearing, orthopedic, visual, paralysis, absence of extremities, and speech disorder;* (c) six types of nervous disorders: *mental retardation, cerebral palsy, Parkinson's disease, epilepsy, multiple sclerosis, and other degenerative and hereditary disorders of the central nervous system,* and (d) three types of mental disorders: *schizophrenia, affective psychosis, and "other" psychoses* (which included senile, and presenile organic psychosis). The reference variables were also further sub-divided to include different categories (levels and ranges) for particular variables. For example, the range for "age" was from "under six years" to "75 years or older." The range for the variable "family income" was from "under $5,000 per year" through "$50,000 or more per year." Marital status includes the categories "married - spouse in household," "married - spouse not in household," "widowed," "divorced," "separated," and "never

married." Employment was divided into those currently "employed," "unemployed," and "not in labor force." Race/ethnicity was categorized as "White American," "African American," "Hispanic American," and "Other," while sex was divided into "male," and "female."

Methodology

The primary data source for this study was the National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics (NCHS). The information from the survey covers a broad range of demographic and health factors. Essentially, the sampling procedure was multi-stage and based on primary sampling units selected in such a way as to ensure accurate representativeness.

Sample

The sample for this study was comprised of 120,032 persons who were interviewed from 46,761 households in 1991. The target population for NHIS was the resident, civilian, non-institutionalized population residing in all 50 states and the District of Columbia.

Procedures

The NHIS instrument contains two major parts. The first part consists of topics that remain relatively the same from year to year. Among these topics are: the incidence of acute conditions, the prevalence of chronic health conditions, restrictions in activity due to impairment or health problems, and utilization of health care services involving physician care and short-stay hospitalization. The second part contains special topics added as supplements to each year's questionnaire.

Careful procedures were followed by the NCHS to assure the quality of the data collected. Data were collected on a weekly basis. Most households in the sample were contacted by mail before the interviewers arrived. Potential respondents were informed of the importance of the survey and assured that all information would be held in strict confidence. Interviewers made repeated trips to a household when a respondent was not immediately found.

Field operations for the survey were conducted by the U.S. Bureau of the Census which participated in the survey planning, selected the sample, and conducted the interviews. Completed questionnaires were sent from the Bureau's field offices to NCHS for coding, editing, and analysis. To ensure the accuracy of coding, a 5% sample of all questionnaires was recorded and keyed by other coders. A 100% verification procedure was used if certain error tolerances were exceeded. Staff of the Division of Health Interview Statistics then edited the files to remove impossible and inconsistent codes.

Reliability and Types of Estimates

Because NHIS estimates are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete Census had been taken using the same survey processing procedures. To the greatest extent possible, sampling and non-sampling errors were kept to a minimum by methods built into the survey procedures. Although it is very difficult to measure the extent of bias in the NHIS, a number of studies have been conducted to examine this problem. The results have been published in several reports.

As noted, the sample represented the resident, civilian, non-institutionalized population of the United States. It should be pointed out that the sample did not include persons residing in nursing homes, members of the armed forces, institutionalized persons, or U.S. nationals living abroad. As data were collected, the samples were consolidated to produce quarterly files each consisting of data for 13 weeks. Weights to adjust the data to represent the U.S. population were assigned to each of the four quarterly files. These quarterly files were later consolidated to produce the annual file, which is the basis of most tabulations of NHIS data.

Sampling Errors

The chances are about 68 out of 100 that an estimate from the sample would differ from a complete Census estimate by less than the standard error. Individual standard errors were not computed for each estimate in this report. Instead, standard errors were computed for a broad spectrum of estimates. Regression techniques were then applied to procedure equations from which a standard error for any estimate could be approximated. The nature of the sampling plan made it necessary to use special weights in the data processing and statistical analyses. The weights were provided by the NCHS as an essential part of documentation.

The Howard University Research and Training Center bought NCHS standardized microdata tapes that included the regular characteristics of the 1991 survey. The NHIS data contained information relating to the following areas: (a) personal and demographic characteristics of household members; (b) information on illness, injuries, chronic diseases and impairments, long and short-term disabilities; (c) utilization of medical care services and other health topics; and (d) information on geographic location. Data from the tape were read using an SAS statistical application program on a mainframe computer. Descriptive analyses were run to obtain frequency distributions of individual racial/ethnic groups across demographic variables such as sex, age, education, income, marital status, employment status, and geographic location among the four categories of disability, namely, (a) chronic health conditions; (b) physical, sensory, and language impairments; (c) nervous disorders; and (d) mental disorders. An analysis of the association (Cramer's V) between racial/ethnicity and the demographic variables within each category of disability was also conducted.

Results

Prevalence Description

Introduction

In presenting the results, emphasis was placed on the identification and discussion of those findings that appeared to be the most salient and which also might have the most profound implications for policy change. Not every possible comparison is presented, but rather the findings discussed, especially the percentages, are primarily those with immediate relevance. These results are also generally presented in keeping with a model ordered along the lines of: (a) total disability population, (b) race/ethnicity, and (c) type of disability subgroup within the broader population. The results pertaining to specific variables, race/ethnicity, and types of disability should not be expected to be uniformly identical nor to exactly parallel each other. For example, coverage presented as pertinent for gender in one disability population may be different for another population.

Chronic Health Conditions

Sex. Among persons with chronic health conditions, the percentage of females (54.98%) was almost 10% more than that of males (45.02%). Within this group, the difference between African American male and female percentages was still higher with 38.68% male and 61.32% female. In the Chronic Health Conditions group, this was the largest male/female percentage difference among the four racial and ethnic groups (see Appendix A, Table 1). For specific conditions, females in the African American sub-population appeared to be at particularly greater risk for arthritis (28.94% male; 71.06% female), hypertension (37.49% male; 62.51% female), diabetes (37.66% male; 62.34% female), and heart disease (39.57% male; 60.43% female). Hispanic American females were also represented at a higher percentage

(59.86%) level than the female percentage in the Chronic Health Conditions population (54.98%). For specific conditions, within the Hispanic American group, the female percentage was much higher than the male percentage for arthritis (27.97% male; 72.03% female), hypertension (32.23% male; 67.77% female), heart disease (38.14% male; 61.86% female), and diabetes (43.49% male; 56.51% female). The male/female percentages in the "Other" racial/ethnic group was 47.36% to 52.64%, respectively. However, within this group, the female percentage for arthritis were notably much higher (male: 32.17%; female: 67.83%). Males in the "Other" racial/ethnic group outnumbered females for conditions such as intervertebral disc disorder (male 62.86%; female 37.14%), cerebrovascular disease (57.27% male; 42.73% female), heart disease (56.71% male; 43.29% female) and respiratory disorder (53.27% male; 46.73% female).

Age. The largest percentages of persons with chronic health conditions were observed in older age groups (see Appendix A, Table 2). This underscores a tendency for chronic health conditions to be somewhat related to increasing age. Across most racial/ethnic groups, a majority of persons with chronic health conditions were 55 years or older: 63.73% among White Americans, 56.5% among African Americans, 46.51% among Hispanic Americans, and 50.83% among persons from the "Other" racial/ethnic group category. The next highest percentages of chronic health conditions were found in the 35 to 54 year-old age group among all racial/ethnic groups: 22.85% among White Americans, 26.21% among African Americans, 28.91% among Hispanic Americans, and 32.43% among members of "Other" group. While the percentages of persons with specific chronic health conditions were generally higher with increases in age, an exception to this pattern was noted among African Americans and Hispanic Americans with respiratory

disorders. There were 14.81% of African Americans and 15.04% of Hispanic persons under 6 years of age with respiratory disorders compared to 8.73% in this age group for the total population. Similarly, while there were 18.73% of persons in the 6 to 16 year-old age group with respiratory disorders in the total Chronic Health Conditions population, African Americans and Hispanic Americans were overrepresented with 27.5% and 28.91%, respectively.

Education. A restricted analysis of persons who had completed grade levels 9 or above revealed the following: the largest numbers of people with chronic health conditions (70%) were at the education levels of either 9 to 11 years or 12 years. A plurality of these persons (46.96%) had 12 years of education. With respect to the college education subgroups, more people from the "Other" racial/ethnic group (37.14%) and White American group (31.67%) had a college education compared to African Americans (23.49%) and Hispanic Americans (23.29%) (see Appendix A, Table 3).

Family income. There was a high number of African Americans and Hispanic Americans in the lowest family income group. Close to one-quarter of African Americans (23.16%), 18.92% of Hispanic Americans and 17.87% of "Others" with chronic health conditions had an annual family income of less than $7,000. More than half of African Americans (58.06%) and nearly half of Hispanic Americans (49.31%) with chronic health conditions had family incomes under $15,000. While Americans 45.37% of Whites were in the higher income brackets of $25,000 or more, only 21.87% of African Americans were represented in these income brackets (see Appendix A, Table 4).

Marital status. On average, 60.46% of persons with chronic health conditions were married and living with a spouse; nearly 20% were widowed; 8.44% were divorced; and 9.14% had never been married. For the race/ethnicity breakdown, fewer African Americans (40.61%) were married

and living with a spouse; more of them were widowed (25.1%), divorced (12.52%), and never married (13.63%). The percentages of African Americans (13.63%) and Hispanic Americans (13.6%) who had never been married were in excess of White Americans (8.41%) and members of the "Others" racial/ethnic group (8.06%). African Americans had the lowest percentages among all race/ethnic groups in the category of "married and living with a spouse." Conversely, African Americans also had the highest percentages in the "widowed," "divorced," "separated," and "never married" categories (see Appendix A, Table 5).

Employment. Among persons with chronic health conditions an average of 65.76% were not in the labor force. Among African Americans with chronic health conditions, 69.59% were not in the labor force. While 33.43% of White Americans, 33.75% of "Others" and 29.89% of Hispanic Americans were among persons who were employed, only 28.41% of African Americans were employed (see Appendix A, Table 6). Thus, African Americans have the highest rate of unemployment among all racial/ethnic persons with chronic health conditions.

Geographic region. Among the four geographic regions, the South had the highest percentage of persons with chronic health conditions (38.32%) followed by the Midwest (23.92%), the Northeast (19.13%), and the West (18.64%). More than half of the African Americans (55.5%) with chronic health conditions lived in the South while another 20.67% of them were in the Midwest. Approximately, 71% of Hispanic Americans with chronic health conditions resided in the South (35.24%) or the West (35.46%) (see Appendix A, Table 7).

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Physical, Sensory, and Language Impairments

Sex. The percentage of persons with physical, sensory, and language impairments was larger for males (58.53%) than for females (41.47%). This was a considerable departure from the male/female ratio found among persons with chronic health conditions, where the percentage of females was far in excess of the percentage of males. Male percentages in the White and Hispanic groups were at least 5% greater than female percentages in these groups. The percentage of males in the "Other" racial/ethnic group was almost the same as that of females. In the African American group, the female percentage (51.05%) was higher than the male percentage (48.95%), (see Appendix B, Table 1).

Age. The age intervals with the largest percentages of physical, sensory, and language impairments were 55 to 74 years (30.08%), 35 to 54 years (24.94%), and over 74 years (17.41%). The proportion of impairments tended to be lower at younger age levels, but increased within age groups 35 to 74 years of age, and decreased for members of all racial/ethnic groups over 74 years of age. Over 72% of the persons with impairments were 35 years or older. Further, nearly 55% of persons with impairments were of working age (17 to 64 years). A notable exception was found among persons with speech impairments. Nearly 68% of Hispanic Americans in the birth to 16 age range had this particular disability. Persons in the White American, African American, and "Other" groups were also found in relatively high percentages in the birth to 16 age range among persons with speech impairments (see Appendix B, Table 2).

Education. Analyses of persons who were at grade levels 9 or above revealed characteristic bulges at grades 9-11 years (20.99%) and 12 years (47.17%). Percentages of persons with some college education were very

similar among White Americans (23.8%), African Americans (23.83%), and Hispanic Americans (24.87%) in this disability category. However, among persons who were college graduates, the percentages of African Americans (5.63%) and Hispanic Americans (7.3%) were relatively small compared to White Americans (12.07%) (see Appendix B, Table 3).

Family income. The proportion of White Americans with impairments at the lower income levels was lower, while at the higher income levels it was correspondingly higher. Conversely, African Americans in the impairment category were disproportionately overrepresented in the lower income brackets and disproportionately underrepresented in the higher income brackets. Though nearly 21% of African Americans with impairments had incomes less than $7,000, only 7% of White Americans were at this income level. Likewise, while nearly 19% of White Americans had incomes of $50,000 or more, only 8% of African Americans w e at this income level. Hispanic Americans with impairments were also found in larger percentages at the lower income levels and in relatively small percentages at the higher income levels (see Appendix B, Table 4).

Marital status. Compared to the other three racial/ethnic groups, fewer African Americans with impairments were married and living with a spouse. While 62.89% of White Americans, 58.58% of Hispanic Americans, and 52.67% of "Others," were married and living with a spouse, only 37.7% of African Americans were in this marital status category. Further, compared to the other three groups, African Americans with impairments were found in higher proportions in the "widowed," "divorced," "separated," and "never married" categories (see Appendix B, Table 5).

Employment. Approximately, 62% of persons with physical, sensory, and language impairments were not in the labor force. This was about 11%

more than the number found in the 1987 NIH survey. The percentage of employed White Americans (47.24%) was close to the percentage of White Americans not in the labor force (49.69%). This was not true for African Americans where the percentage of persons with impairments who were not in the labor force (59.07%) was far in excess of the percentage employed (36.55%). Hispanic Americans with impairments had the second largest gap between those employed (44.08%) and those not in the labor force (51.87%). Persons in the "Others" racial/ethnic group had the highest rate employed (56.9%) and the lowest rate among those not in labor force (41.15%) (see Appendix B, Table 6).

Geographic region. The largest percentage of the total group of persons with impairments resided in the South (36%). A little more than half of all African Americans with impairments (51.1%) lived in the South. Their next highest geographic concentration was in the Midwest (23.17%). A similar pattern was observed for White Americans, with their two largest geographic concentrations in the South (32.32%) and the Midwest (27.27%). While 30% of Hispanic Americans were located in the South, the highest percentage of this group (49.79%) resided in the West. This was different from the findings with regard to Hispanic Americans in the chronic health conditions category. In that case, 71% of the Hispanic American population was almost equally divided between the South and the West. People in the "Others" racial/ethnic group with impairments lived largely in the West (65%), followed by 15.98% in the South, and 14.12% in the Midwest (see Appendix B, Table 7).

Nervous Disorders

Sex. Proportionately, across all racial/ethnic groups combined, more males appeared to have nervous disorders than females. African American

males with nervous disorders had the highest percentage (58.1%), followed by 55.62% for White American males, and 53.16% for Hispanic American males. Among members of the "Other" racial/ethnic group, the percentage of nervous disorders was almost evenly distributed between the two gender groups. When individual nervous disorders were examined, all African Americans with Parkinson's disease (100%) were found to be males. Among African Americans with epilepsy, 64.42% were males, and for African Americans with mental retardation, 60.29% were male. While Hispanic American males were overrepresented in the mental retardation (68.93% male; 31.07% female) and epilepsy (54.13% male; 45.87% female) categories, Hispanic American females outnumbered males for multiple sclerosis (100% female), cerebral palsy (39.88% male; 60.12% female), and "other" nervous disorders (41.56% male; 58.44% female). In the "Other" racial/ethnic group, no one (neither male nor female) reported having Parkinson's disease; 100% of persons reporting multiple sclerosis were female (see Appendix C, Table 1).

Age. A majority (71.5%) of the population with nervous disorders was 35 years old or older. However, a high percentage of Hispanic Americans (39.53%), African Americans (32.33%), and persons in the "Other" racial/ethnic group (29.09%) within the birth-to-16 years-old age group had nervous disorders. For example, mental retardation was the most prevalent nervous disorder among African Americans (53.9%), White Americans (47.1%), and Hispanic Americans (44.21%) in the 6 to 16 age range. Further, in the mental retardation category, "Other" and Hispanic American children under 6 years of age were overrepresented (22.97% and 11.23% respectively). High percentages of persons with epilepsy were reported in the birth-to-16 years-old age group among Hispanic Americans (51.46%), "Others" (36.59%), White Americans (19.21%), and African Americans (16.62%). Among older

persons (55 years of age or older) with epilepsy, the percentage which was African American was the largest of all the groups. While 2.57% of Hispanic Americans, 19.79% of White Americans, and 20.65% of "Others" aged 55 years or older had epilepsy, 33.82% of African Americans in this age group were epileptic (see Appendix C, Table 2).

Education. The largest percentage of the total nervous disorder population was observed for the level of 12 years of education (42.17%); 27.25% had from 9 to 11 years of education. Going up the educational ladder, the percentage of White Americans tended to increase while the percentages of African Americans and Hispanic Americans tended to decrease (see Appendix C, Table 3).

Family income. Relatively minor variations were found across the different income levels for White Americans in the total population of persons with nervous disorders. However, "Others," African Americans, and Hispanic Americans had disproportionately higher percentages at the lower income levels compared to White Americans. African Americans also had the lowest percentage at higher income levels (see Appendix C, Table 4).

Marital status. While 43.33% of White Americans, 33.19% of Hispanic Americans, and 31.31% of "Others" reportedly were married and living with a spouse in this population, African Americans represented the lowest with 26.9% in this category. They also had the highest (29.96%) percentage among those who were either widowed, divorced, or separated. Another point worthy of note here is that approximately half of all Hispanic Americans and "Others" had never been married, while 44.14% of African Americans and 35.47% of White Americans were reported for the never married category (see Appendix C, Table 5).

Employment status. While one-quarter of the White Americans and a little more than one-quarter of "Others" were employed, only 12.32% of African Americans and 17.75% Hispanic Americans were employed among those who had nervous disorders. Again, among those who were not in the labor force, African Americans had the highest (85.14%) percentage (see Appendix C, Table 6).

Geographic region. Similar to the populations with chronic health conditions and impairments, a plurality of persons with nervous disorders (35.86%) lived in the South. The next largest group in this population lived in the Midwest (24.48%). Examining the racial/ethnic groups separately, more than half of the African Americans were in the South, followed by 21.17% in the Midwest and 15.57% in the Northeast. The spread of Hispanic Americans in the nervous disorders group was 38.66% in the West, 29.18% in the South, 25.47% in the Northeast, and 6.69% in the Midwest. Compared to Hispanic Americans with chronic health conditions and impairments living in the Northeast region, the percentage of Hispanic Americans with nervous disorders was proportionately higher in this region. More than half of those in the category "Other" lived in the West (51.17%), 26.46% lived in the Midwest, and 12.33% lived in the South (see Appendix C, Table 7).

Mental Disorders

Sex. The population with mental disorders was almost equally divided between the two genders with 49.21% male and 50.79% female. Some interesting comparisons emerged, however, when ethnic groups were examined separately. For example, among White Americans and Hispanic Americans with mental disorders, male percentages were lower than female percentages (48.44% male and 51.56% female among White Americans; 47.82% male and 52.18% female among Hispanic Americans). This trend was

reversed among African Americans and "Others." Mental disorders were about two times more prevalent among African American and "Other" males compared to females (see Appendix D, Table 1).

Age. The age intervals with the largest percentage of all persons with mental disorders were the 35 to 54 years old (41.31%), 17 to 34 years old (22.36%), and 55 to 74 years old (21.49%) categories. A vast majority of African Americans with mental disorders (70%) were between 17 and 54 years of age. Another 7.71% was reported in the birth-to-16-years old age group, while 22.46% were persons 55 years old or older. "Others" and Hispanic Americans with mental disorders had the largest percentages of persons under 16 years of age with 31.39% of "Others" and 12.18% of Hispanic Americans, compared to 7.71% of African Americans and 3.12% of White Americans in this age group. Hispanic Americans and "Others" were also overrepresented in the 55 years or older age groups. Reportedly, 34.41% of Hispanic Americans, 31.25% of "Others," and 30.8% of White Americans were 55 years or older. It is important to note that, compared to other racial/ethnic groups, the largest proportion of African Americans with mental disorders were in the working age (17 to 54 years) group (see Appendix D, Table 2). This may at least partially explain the overrepresentation of African Americans among the unemployed.

Education. The analysis done to categorize persons who were at educational levels 9 or higher revealed that close to 47% of them had completed grade 12. Another 26% reported having some college and 22% reported 9 to 11 years of education. Among African Americans with mental disorders, 51.67% had completed 12 years of education. Although 20% of African Americans reported some college, none had graduated. A majority of

Hispanic Americans (53.2%) reported having some college and another 26.8% of them had completed 12 years education (see Appendix D, Table 3).

Family income. Close to half (48.16%) of all persons with mental disorders were at the lowest family income categories, with 19.08% of them earning less than $7,000 and 29.08% of them with family incomes between $7,000 and $14,999. This condition was more pronounced for Hispanic Americans and African Americans; about 77% of Hispanic Americans and 63% of African Americans were at the lowest income levels. Again, there were fewer African Americans and Hispanic Americans at higher income brackets compared to White Americans in these categories (see Appendix D, Table 4).

Marital status. Compared to populations of persons with (a) chronic health conditions, (b) impairments, and (c) nervous disorders, the population with mental disorders had the lowest percentage of persons who were married and living with a spouse (35.85%). No one in the "Other" racial/ethnic group with mental disorders was married and living with a spouse; 45.55% were widowed, and 54.55% had never been married. Next to "Other" racial/ethnic group, African Americans had the highest percentage of people who had never been married (46.71%) and the lowest percentage of those who were married and living with a spouse (22.7%) (see Appendix D, Table 5).

Employment status. Compared to persons in all other disability categories, individuals in the mental disorders group had the lowest employment rate (14.69%). There was no one (0%) among Hispanic Americans and "Others" reported as employed, while 6.43% African Americans and 18.48% of White Americans were in this category. It is important to note that the proportions of minority persons who were not in

the labor force were far higher than the proportion of White Americans who were not in the labor force (see Appendix D, Table 6).

Geographic region. The South and the West appeared to have an approximately equal distribution of persons with mental disorders (29.35% in the South and 30.02% in the West). All persons in the "Others" (100%) group in this population lived in the West. Hispanic Americans were also represented in large numbers in the West (41.41%) followed by 28.92% and 23.24% in the South and the Northeast, respectively. The spread of African Americans with mental disorders among the four regions was very similar to the spread for African Americans in the three other disability categories (chronic health conditions, impairments, and nervous disorders). Slightly more than half (50.58%) of all African Americans with mental disorders lived in the South, followed by 21.1% in the Midwest, 15.53% in the Northeast, and 12.79% in the West (see Appendix D, Table 7).

Demographic Associations

Association between Race/Ethnicity and Disability

In order to probe more deeply into the connection between disability and minority group membership, further examination was necessary. Essentially, this consisted of studying the association between race/ethnicity and disability from several vantage points. The first of these involved a determination of the association between race/ethnicity and the demographic variables (Sex, Age, Education, Family Income, General Limitations of Activities, Work-Related Limitations of Activities, Marital Status, Employment, and Geographic Region) within each condition type: (a) Chronic Health Conditions -- heart disease, cerebrovascular disease, respiratory disorder, intervertebral disc disorder, diabetes, hypertension, and arthritis; (b) Physical, Sensory, and Language Impairments -- hearing

impairment, orthopedic impairment, visual impairment, paralysis, loss of extremities, and speech impairment; (c) Nervous Disorders -- schizophrenia, affective psychosis, and other psychoses; and (d) Mental Disorders -- mental retardation, cerebral palsy, Parkinson's disease, epilepsy, multiple sclerosis, and other disorders. Secondly, the association between race/ethnicity and the nine demographic variables for each disability category as a whole was calculated.

For all these analyses, the measure of association was the statistic known as †Cramer's V which ranges from .00 to 1.0 and is interpreted directly on the basis of its size. A low number means weak association and a high number means strong association. [1]

Race/Ethnicity, Demographic Variables, and Chronic Health Conditions. Table 1 shows associations between race/ethnicity and the nine demographic variables within each type of chronic health condition. As illustrated in the table, these associations were strongest for age, family income, marital status, and geographic region. These relationships were more pronounced for some chronic health conditions than they were for others. For example, the association between race and age was strongest in the respiratory disorder (V=.13), cerebrovascular disease (V=.12), and diabetes (V=.10) groups. The association between race and family income was strongest in the cerebrovascular (V=.19), diabetes (V=.18), respiratory disorder (V=.17), hypertension (V=.15), arthritis (V=.15), and heart disease (V=.14) categories. For marital status, the association was almost the same across all types of chronic health conditions ranging from .11 for heart disease, intervertebral disc disorder, and arthritis; to .12 and .13 respectively for

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[1] †Footnote: The statistical symbol for Cramer's V in this report is different (V) from what it was (C) in the 1991 monograph (Asbury et al., 1991). Both symbols are acceptable.

cerebrovascular disease and hypertension; and .14 for respiratory disorder and diabetes.

Table 1.

Values of Cramer's V for Measuring Association Between Race/Ethnicity and Demographic Variables for Seven Types of Chronic Health Conditions

	Chronic Health Conditions						
	Heart Disease	Cerebro-vascular	Respira-tory Disorder	Interver-tebral Disc Disorder	Diabetes	Hyper-tension	Arthritis
Race by							
Sex	.07	.03	.03	.03	.06	.06	.05
Age	.08	.12	.13	*	.10	*	.07
Education	.07	.13	.07	.09	.08	.08	.07
Fam. Income	.14	.19	.17	.14	.18	.15	.15
Gen.L.O.A	.07	.13	.03	.06	.06	.09	.08
Work L.O.A	.07	.11	.05	.08	.06	.09	.09
Marital Status	.11	.12	.14	.11	.14	.13	.11
Employment	.03	.05	.05	.08	.04	.03	.05
Geo. Region	.10	.15	.13	.13	.17	.17	.12

* Row or column sum to zero - no statistic computed.

Race/Ethnicity, Demographic Variables and Impairments. Table 2 illustrates that association between race/ethnicity and other demographic variables were strongest for age, family income, marital status, and geographic region. The extent of these associations varied across impairments from V=.02 to V=.24. For example, the highest associations between race and age were seen for loss of extremities (V=.24), and paralysis (V=.17). For family income, the association with race was highest in the loss of extremities

(V=.23) and speech impairment (V=.23) groups. It should be noted that the relationships between race and the nine demographic variables were the strongest in the loss of extremities group compared to the other five impairment groups.

Table 2.

Values of Cramer's V for Measuring Association Between Race/Ethnicity and Demographic Variables for Six Types of Impairments

	Physical, Sensory, Language Impairments					
	Hearing Impairment	Orthopedic Impairment	Visual Impairment	Paralysis	Loss of Extremities	Speech Impairment
Race by						
Sex	.05	.02	.05	.04	.12	.06
Age	.10	.08	.10	.17	.24	.14
Education	.06	.06	.10	.09	.14	.13
Fam. Income	.13	.14	.19	.18	.23	.23
Gen.L.O.A	.06	.06	.09	.11	.12	.06
Work L.O.A	.05	.08	.11	.13	.22	.09
Marital Status	.12	.11	.15	.14	.18	.19
Employment	.06	.05	.08	.11	.15	.14
Geo. Region	.13	.15	.20	.17	.18	.18

Race/Ethnicity, Demographic Variables, and Nervous Disorders.

Table 3 indicates that associations between race/ethnicity and the nine demographic variables within nervous disorders were the strongest for family income, geographic region, limitations of activities, and marital status. Relationships were more pronounced within some nervous disorder groups

than they were for others. The strongest values of associations were observed within the epilepsy, multiple sclerosis, and other disorders groups for family income.

Table 3.

Values of Cramer's V for Measuring Association Between Race/Ethnicity and Demographic Variables for Six Types of Nervous Disorders

	Nervous Disorders					
	Mental Retardation	Cerebral Palsy	Parkinson's Disease	Epilepsy	Multiple Sclerosis	Other Disorders
Race by						
Sex	.07	.08	*	.08	.20	.13
Age	.12	.19	*	.20	*	*
Education	*	.10	*	.19	.28	*
Fam. Income	.20	.20	*	.29	.38	.45
Gen.L.O.A	.08	.10	*	.10	.17	.16
Work L.O.A	.11	.14	*	.15	.19	*
Marital Status	.08	.15	*	.17	.17	*
Employment	.13	.11	*	.18	*	*
Geo. Region	.15	.18	*	.23	.20	.17

* Row or column sum to zero - no statistic computed.

Race/Ethnicity, Demographic Variables, and Mental Disorders. Table 4 shows that the association between race/ethnicity and other demographic variables were strongest for age, family income, marital status, and geographic region. These measures of the relationships were computed for the schizophrenic and other psychosis groups only. No relationship statistics could be computed for affective psychoses due to distortions in the data

configuration. The "Other" racial/ethnic group, for example, did not have anyone with affective psychosis.

Table 4.

Values of Cramer's V for Measuring Association Between Race/Ethnicity and Demographic Variables for Three types of Mental Disorders

	Mental Disorders		
	Schizophrenic	Affective Psychosis	Other Psychosis
Race by			
Sex	.25	*	.10
Age	*	*	.36
Education	.20	*	*
Fam. Income	*	*	.33
Gen.L.O.A	.15	*	.18
Work L.O.A	.20	*	.18
Marital Status	.18	*	.24
Employment	.17	*	.18
Geo. Region	.20	*	.23

* Row or column sum to zero - no statistic computed.

Association Between Race/Ethnicity and Selected Demographic Variables Across Disability Categories. Table 5 presents the average values of Cramer's V for associations between race/ethnicity and the selected demographic variables across each category of disability. The association between race and family income was consistently observed to be among the strongest across all four categories of disabilities. It is particularly important to note that the coefficient for the association (V=.25) between race and family income in the nervous disorder group was by far the strongest among all

values of association between race and any other demographic variable across all disability categories. Following the variable of family income, geographic region had uniformly higher values across all disability categories, indicating

Table 5.

Values of Cramer's V for Measuring Association Between Race/Ethnicity and Demographic Variables Across Each Category of Disability

	Category of Disability			
	Chronic Health Condition	**Physical, Sensory, & Language Impairments**	**Nervous Disorders**	**Mental Disorders**
Race by				
Sex	.05	.06	.09	.12
Age	.07	.14	.09	.12
Education	.08	.10	.09	.07
Fam. Income	.16	.18	.25	.11
Gen. L.O.A.	.07	.08	.10	.11
Work L.O.A.	.08	.11	.10	.13
Marital Status	.12	.15	.07	.14
Employment	.05	.10	.07	.12
Geo. Region	.14	.17	.16	.14

a comparatively strong association with race. Similarly, the association between race and marital status was relatively stronger across all disability categories except for nervous disorders. There was no evidence of a systematic relationship between race and sex or between race and education. However, while relatively stronger values of association were found between race and age within the impairment and mental disorders groups, there was

no evidence of a strong relationship between these variables within the chronic health and nervous disorder groups.

Discussion and Conclusions

As noted in the results section of this report, significant variations exist within the area of chronic health conditions relative to gender. When examined according to race/ethnicity, African Americans had the largest male/female percentage difference (38.68% male; 61.32% female) among all four of the racial/ethnic groups compared. Females among African Americans comprised more than 60% of persons with arthritis, hypertension, diabetes, and heart disease. Similarly, Hispanic American females, in comparison to males, had a higher percentage of arthritis (72%), hypertension (68%), heart disease (62%), and diabetes (57%). Although there is no evidence for a systematic connection between race and gender in the chronic health condition group, African American and Hispanic females in this group are proportionately higher in percentages compared to the female percentage in the population of persons with chronic health conditions. In mental and nervous disorders, African American males were represented in higher percentages compared to the male percentages in the populations of persons with mental and nervous disorders. In general, the overrepresentation of African Americans and Hispanic Americans in all the four disability categories appears to indicate that White Americans are generally more healthy than minority groups. Moreover, in all categories of disabilities, a majority of persons were in the age groups between 17 and 64 years old. Some other notable findings relative to age and disability are: While only 9% of White Americans under 16 years had "other psychoses," 50% of "Others," 46% of Hispanic Americans, and 20% of African Americans in this age group fell into this category. Similarly, exceptionally high percentages of African Americans (60%) and Hispanic

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Americans (56%) in the mental retardation subgroup were under 16 years of age. In addition, slightly more than half of all persons with epilepsy were under 16 years of age, and all (100%) "Other" persons who reported "other nervous disorders" were under 16 years of age. Two major conclusions that emerge from these findings are:

1. A large number of minority persons with disabilities are in the working-age population.
2. Disproportionately high numbers of African Americans and Hispanic Americans appear, at a very young age, to have nervous disorders and mental problems.

The Howard University Research and Training Center conducted an earlier study to examine the prevalence of disability (Asbury et al., 1991) among racial/ethnic minorities. Data for the earlier study came mainly from the 1987 National Health Interview Survey (NHIS). The authors of the earlier study called special attention to the disproportionately large number of young African Americans and Hispanic Americans in the mental retardation and nervous disorder groups. Data from the 1991 research report reveal strikingly similar results to the findings of this report indicating very little change in the disability conditions across racial/ethnic groups from 1987 to 1991. The earlier study highlighted the possible connection between the overrepresentation of African Americans in special education classes in public schools, and the overrepresentation of African Americans under age 16 in the mental disorder and nervous disorder groups. This overrepresentation was also attributed to the likelihood of lower educational attainment among persons from minority groups. The findings of the present study are consistent with the earlier study and require further investigation of why young persons from minority groups

(especially African Americans and Hispanic Americans) are more susceptible to certain mental and nervous disorders.

As was reported in the 1991 study, there is a remarkable and consistent tendency for minority persons across disability categories to be at the bottom of the economic ladder and for White Americans to be at the top. Table 6 describes the median incomes for each racial/ethnic group across the four disability categories.

Table 6

Median Family Income by Race/Ethnic Group in 1987 and 1991

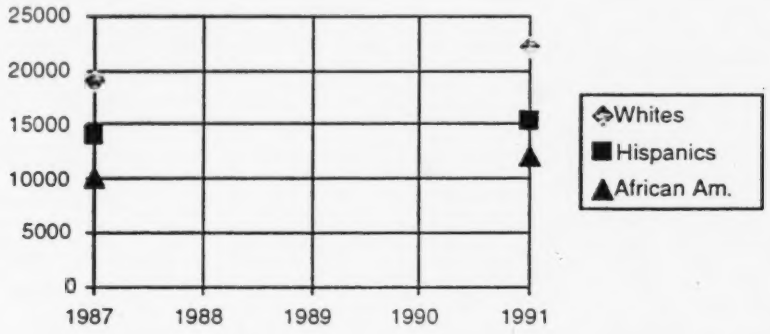
Disabling Conditions	Median Family Income							
	White Am.		African Am.		Hispanic Am.		Overall	
	1987	1991	1987	1991	1987	1991	1987	1991
Chronic Health	19000	22577	10000	11235	13000	15209	17500	21233
Physical, Sensory, & Lang. Impairments	22050	26014	10800	14055	16500	18652	20000	21980
Nervous Disorders	18000	22330	9500	11024	13250	16152	16250	21700
Mental Disorders	16600	17713	10000	11493	13500	11147	14121	15712

A comparison between 1987 and 1991 median family incomes across racial/ethnic groups reveals two very striking similarities about the relationship between racial/ethnicity and family income (See Figure 1). First, the four racial/ethnic groups are in the same relative income position, no matter what disability category, with White Americans consistently at the top and African Americans consistently at the bottom. Additionally, it is noteworthy that the income increases for African American and Hispanic Americans over five years were quite marginal compared to the income increases realized by White Americans during this period. This finding leads

us to conclude that African Americans and Hispanic Americans with disabilities not only have lower incomes compared to White Americans with disabilities, but also, whatever income they may have is not commensurate with the rising costs of living.

Figure 1.

A Comparison Between 1987 and 1991 Average Median Family Incomes Across Race/Ethnic Groups.



With regard to marital status, the findings in the current study indicate that African Americans were proportionately underrepresented among those who were married and living with a spouse and overrepresented among those who were widowed, divorced, separated, or never married. More generally, compared to White Americans, minority persons were proportionately fewer among those who were married and living with a spouse. A point worth noting here is that the proportion of never married persons was particularly high among those who had mental or nervous disorders. There were 54% of "Others" and 47% of African Americans with mental disorders in the "never married" category. Similarly, among persons with nervous disorders, half of Hispanic Americans and "Others" and 44% of the African Americans had never married. It was not possible in the current study to determine if a relationship existed between marital status and disability. However, it is important to highlight: (a) the possible connection between this status and

cultural practices, and (b) its implications for the social and mental well-being of this population.

In the matter of employment, compared to the findings of the earlier study (Asbury et al., 1991), employment was on the decline for all persons with disabilities. Although persons in all racial/ethnic groups were largely in working-age groups, only a small segment of them were employed; and the majority was not in the labor force. In three of the four disability categories, African Americans topped the list among those who were not in the labor force and they were at the bottom of the list among those who were employed. Hispanic Americans were also hard hit by unemployment. It is worth noting that 0% employment was reported among Hispanic Americans with mental disorders. The question of why a substantial number of persons with disabilities among all racial/ethnic groups are not in the labor force, even though a vast majority of them are likely to be of working-age, is worthy of further study. Earlier studies have pointed to factors such as accessibility and job accommodation issues; physical, psychological, and attitudinal barriers; supplemental security income (SSI), and social security disability insurance (SSDI) as reasons for persons with disabilities not being in the labor force.

A recent study conducted by the HURTC (Walker, Asbury, Rodriguez, & Saravanabhavan, 1995) examined the variations in the cost of purchased rehabilitation services among vocational rehabilitation consumers across racial/ethnic groups. The study established that White American consumers generally had more money spent on them during the rehabilitation process compared to consumers from minority groups. Additionally, the study found that "time spent in VR (vocational rehabilitation)" and the "number of services" were the two major variables associated with money spent on a client. There is evidence that minority persons with disabilities do not actively seek

VR services, and that those who do seek VR services do not stay long enough in the rehabilitation process. Consistent with these results, two major facts emerge from the current study: a vast majority of persons from minority groups are (a) not in the labor force and (b) are also unemployed.

Upon examining the geographic areas where persons with disabilities resided, it was found that a plurality of them lived in the South (the region covering the District of Columbia and 15 states from Delaware to Texas). More than half of the African Americans with disabilities lived in this region. One-third of the Hispanic Americans lived in the South, while slightly more than a third of them resided in the West (comprising 13 states in the West including Alaska and Hawaii). Among persons in the "Other" group, in three disability categories out of four, more than one half lived in the West; all (100%) in the mental disorders category were located in the West.

Policy Implications

There has been very little change in the status of minority persons with disabilities over the years. The following are some of the persistent and characteristic factors of minority persons with disabilities that have serious implications for current and future policies:

1. A large number of minority persons with disabilities are of working age. While the majority of persons with disabilities are either not in the labor force or unemployed, minority persons, especially African Americans, are disproportionately overrepresented in these categories. These findings have important implications for the vocational rehabilitation service system. They emphasize the need for aggressive outreach efforts and more effective culturally appropriate services on the part of vocational rehabilitation professionals to bring greater numbers of persons with disabilities into the workforce.

2. More females among African Americans and Hispanic Americans have chronic health conditions such as arthritis, diabetes, hypertension, and heart disease. Among African Americans, disproportionately more males than females have mental and nervous disorders. These findings indicate a clear need for preventive medical and psychological services with special focus on the particular disabilities of greater risk to each gender group.

3. With regard to chronic health conditions and physical, sensory, and language impairments among persons age 65 or older, a much higher proportion is White American than African American, Hispanic American, or "Other." This is probably a direct result of better health care and nutrition among Whites, who, when compared to other racial/ethnic groups, appear to live longer. Among persons 55 years or older, the proportion of White Americans is consistently higher than African Americans and Hispanic Americans in all the four disability categories. Although there are low percentages of older-age-group African Americans and Hispanic Americans in the sample, on average, more African Americans (86%) and Hispanic Americans (80%) report limitations in activities of daily living than White Americans (76%). This situation leads us to the question whether persons from the minority communities age "faster" than White Americans. Studies conducted among American Indians have shown that a member of this group at the age of 40 has functional abilities equal to that of a 65-year-old person in the general population (as cited in Saravanabhavan, Martin, & Saravanabhavan, 1994). American Indian tribes authorized by the Older Americans Act treat persons who are 55 years or older as senior citizens and provide them with elderly care and services. Similar studies comparing African Americans and Hispanic Americans with disabilities to White

Americans with disabilities are necessary to determine reasons for the variations in their functional abilities.

4. Compared to White Americans, disproportionately higher numbers of minority persons experience nervous and mental disorders at a very young age (under 16 years). The implications of this finding for education and specialized services cannot be underestimated. The National Institutes of Health, for example, should conduct research with a particular focus on the social and medical causes for the high occurrence of nervous and mental disorders among African American and Hispanic American youth.

5. In the area of education and income, fewer African Americans and Hispanic Americans with disabilities are matriculating at the college level compared to White Americans with disabilities; they also have incomes consistently less than their White counterparts. African Americans, especially, have incomes ranking at the bottom of the economic ladder (less than $12,000 annual family income) far more frequently than members of other racial/ethnic groups. Policy makers and service providers should be aware of these facts and their impact on the physical, mental, and social well-being of minority persons with disabilities. Furthermore, sight should not be lost of the strong connection between poverty and the lack of educational opportunities.

6. While most minority persons in a number of disability categories are neither married nor living with a spouse, this is especially true of African Americans who are also disproportionately overrepresented in the divorced, separated, and never married categories. These findings also have implications for minority persons' social and mental well-being. There is an urgent need for more research in this area.

7. Persons with disabilities from minority groups are relatively concentrated in the southern and western regions of the nation. Therefore, funds allocated for

services to minority groups of persons with disabilities should be adjusted accordingly for these geographic areas. Services in these areas should also be tailored to the needs of the predominant racial/ethnic group and their specific disabilities.

8. In light of the fact that high numbers of minority persons are in the low income status-groups and/or unemployed, it is more likely that these individuals have no health insurance, or are more dependent on either Medicaid or Medicare. A recent study conducted by the HURTC (Walker, Saravanabhavan, Williams, Brown, & West, 1996) revealed 40% of individuals with disabilities receiving Medicaid. Current discussions about reductions in Medicaid or Medicare benefits as well as shifts to managed health care must be taken into account when considering the health and rehabilitation needs of minority persons with disabilities. Additionally, shifts towards managed health care and reliance on Health Maintenance Organizations (HMOs) must be taken into account with regard to the unique needs of persons from diverse cultural/racial communities. In an effort to contain and reduce health costs, many state and local governments are placing more emphasis on serving low-income families by contracting with managed health care organizations. In many instances, minority persons are unfamiliar with procedural variations which are required since they have been accustomed to using emergency room services, and are less familiar with procedures such as making an appointment with their family doctor in order to obtain appropriate referrals to a specialist. It is, therefore, essential in cases where governmental agencies are making changes in the provision of health care services that persons from low income and minority groups be provided with proper orientation and support in order to learn how to negotiate new systems.

In summary, it should be noted that, compared to White Americans with disabilities, persons with disabilities from minority racial/ethnic groups have higher prevalence rates for certain disabilities, and also for unemployment. Moreover, a higher number of minority persons with disabilities are not in the labor force. Disproportionately more minority persons with disabilities have lower education and income, and more of them live unmarried, divorced, separated, or widowed. While it is necessary to continually probe why persons from minority groups are not faring at least as well as White Americans, it appears that low economic status and lack of equal opportunity, in the true spirit of the term, may well be strong reasons for the present status of minority persons with disabilities. At the present time, when policies are being overhauled and more power and monies are being shifted to state and local authorities, it is crucial that persons with disabilities, especially those from minority groups, be provided more employment opportunities and more effective services which will enable them to benefit themselves and the nation.

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Appendix A

Table 1.
Percentages of Persons with Chronic Health Conditions by Sex

Chronic Health Condition	Race/Ethnicity	Sex	
		Male %	Female %
Heart Disease	White	47.93	52.07
	African American	39.57	60.43
	Hispanic	38.14	61.86
	Other	56.71	43.29
	Total Population	46.68	53.32
Cerebrovascular Disease	White	49.19	50.81
	African American	45.94	54.06
	Hispanic	51.96	48.04
	Other	57.27	42.73
	Total Population	49.02	50.98
Respiratory Disorder	White	47.67	52.33
	African American	49.26	50.74
	Hispanic	50.97	49.03
	Other	53.27	46.73
	Total Population	48.29	51.71
Intervertebral Disc Disorder	White	52.76	47.24
	African American	49.29	50.71
	Hispanic	52.50	47.50
	Other	62.86	37.14
	Total Population	52.69	47.31
Diabetes	White	45.15	54.85
	African American	37.66	62.34
	Hispanic	43.49	56.51
	Other	48.67	51.33
	Total Population	43.72	56.28
Hypertension	White	41.72	58.28
	African American	37.49	62.51
	Hispanic	32.23	67.77
	Other	44.92	55.08
	Total Population	40.42	59.58
Arthritis	White	35.47	64.53
	African American	28.94	71.06
	Hispanic	27.97	72.03
	Other	32.17	67.83
	Total Population	34.30	65.70
Chronic Health Conditions Combined	White	43.61	56.39
	African American	38.68	61.32
	Hispanic	40.14	59.86
	Other	47.36	52.64
	Total Population	45.02	54.98

Table 2.
Percentages of Persons with Chronic Health Conditions by Age

Chronic Health Condition	Race/Ethnicity	Age				
		Birth-16 years %	17-34 years %	35-54 years %	55-74 years %	Over 74 years %
Heart Disease	White	3.53	6.46	19.02	46.53	24.44
	African American	4.60	10.14	23.08	43.34	18.85
	Hispanic	10.15	10.77	20.71	40.77	17.59
	Other	1.48	12.94	20.60	55.09	9.89
	Total Population	4.00	7.18	19.55	46.02	23.25
Cerebrovascular Disease	White	1.45	2.04	11.20	49.00	36.31
	African American	0.47	2.75	15.91	59.09	21.80
	Hispanic	0.50	2.69	17.33	64.09	15.39
	Other	0.00	0.00	20.92	57.02	22.05
	Total Population	1.24	2.14	12.33	51.29	33.00
Respiratory Disorder	White	23.10	18.02	22.08	28.39	8.40
	African American	42.3.	20.68	17.26	15.84	3.92
	Hispanic	43.95	21.14	21.71	8.77	4.43
	Other	24.86	22.76	29.28	18.84	4.26
	Total Population	27.46	18.75	21.59	24.81	7.39
Intervertebral Disc Disorder	White	0.00	16.73	51.96	26.89	4.42
	African American	0.00	4.70	57.37	35.79	2.13
	Hispanic	1.15	20.52	50.87	24.24	3.22
	Other	0.00	23.13	57.69	12.20	6.97
	Total Population	0.08	16.34	52.30	27.04	4.24
Diabetes	White	1.69	6.83	20.50	52.34	18.64
	African American	0.95	3.02	29.32	54.40	12.32
	Hispanic	0.64	4.96	32.64	52.88	8.87
	Other	0.00	7.69	22.69	61.27	8.36
	Total Population	1.41	5.98	23.37	52.95	16.29
Hypertension	White	0.20	4.71	23.45	51.94	19.70
	African American	0.80	6.98	32.68	47.47	12.06
	Hispanic	0.46	9.06	33.87	46.09	10.51
	Other	0.00	7.07	40.02	47.84	5.07
	Total Population	0.32	5.44	26.10	50.68	17.45
Arthritis	White	0.10	5.16	20.27	49.24	25.22
	African American	0.50	4.86	23.01	49.86	21.77
	Hispanic	0.84	5.76	32.33	42.33	18.75
	Other	1.15	3.06	37.14	42.14	16.52
	Total Population	0.20	5.13	21.50	48.82	24.35
Chronic Health Conditions Combined	White	4.99	8.44	22.85	44.19	19.54
	African American	8.60	8.70	26.21	42.69	13.81
	Hispanic	12.90	11.68	28.91	35.22	11.29
	Other	5.67	11.07	32.43	41.42	9.41
	Total Population	4.95	8.71	25.25	43.07	18.00

Table 3.
Percentages of Persons with Chronic Health Conditions by Education

Chronic Health Condition	Race/Ethnicity	Education			
		9-11 years %	12 years completed %	College years %	College graduate %
Heart Disease	White	22.38	44.19	22.03	11.39
	African American	31.49	41.26	21.36	5.90
	Hispanic	36.60	49.51	9.81	4.09
	Other	26.74	36.01	23.79	13.46
	Total Population	23.76	44.02	21.54	10.67
Cerebrovascular Disease	White	20.40	49.03	19.45	11.11
	African American	41.33	43.11	12.01	3.54
	Hispanic	41.11	58.89	0.00	0.00
	Other	18.83	53.33	27.84	0.00
	Total Population	23.65	48.62	18.14	9.59
Respiratory Disorder	White	25.51	42.09	21.71	10.68
	African American	35.97	38.92	19.78	5.33
	Hispanic	33.29	33.25	28.36	5.09
	Other	38.45	26.88	26.55	8.11
	Total Population	27.38	40.89	22.02	9.71
Intervertebral Disc Disorder	White	15.84	51.64	21.72	10.80
	African American	31.72	39.07	23.22	6.00
	Hispanic	28.59	40.06	30.01	1.34
	Other	30.22	38.19	13.74	17.86
	Total Population	17.75	50.02	22.18	10.06
Diabetes	White	23.22	48.82	18.11	9.85
	African American	31.31	47.47	16.84	4.38
	Hispanic	20.02	66.10	8.18	5.70
	Other	28.37	32.94	22.24	16.45
	Total Population	24.44	49.41	17.33	8.82
Hypertension	White	19.36	49.89	20.35	10.40
	African American	30.81	47.75	15.97	5.47
	Hispanic	28.31	44.31	16.44	10.94
	Other	22.63	31.52	32.33	13.52
	Total Population	21.70	48.95	19.69	9.66
Arthritis	White	20.89	47.53	21.01	10.57
	African American	34.13	41.56	15.69	8.62
	Hispanic	32.96	46.66	16.12	4.26
	Other	29.43	37.49	30.32	2.76
	Total Population	22.62	46.81	20.51	10.06
Chronic Health Conditions Combined	White	21.35	46.98	20.98	10.69
	African American	32.84	43.67	17.49	6.00
	Hispanic	30.88	45.83	17.84	5.45
	Other	28.60	34.26	27.09	10.05
	Total Population	23.04	46.96	20.20	9.80

Table 4.
Percentages of Persons with Chronic Health Conditions by Family Income

Chronic Health Condition	Race/Ethnicity	Family Income %				
		Under $7,000	$7,000-14,000	$15,000-24,999	$25,000-49,999	$50,000 or more
Heart Disease	White	8.74	24.23	23.86	26.95	16.21
	African American	20.85	37.99	20.36	16.27	4.53
	Hispanic	21.80	27.40	23.45	19.67	7.67
	Other	24.15	20.74	8.62	22.71	23.78
	Total Population	10.85	25.58	23.26	25.50	14.80
Cerebrovascular Disease	White	9.82	27.71	28.40	23.23	10.83
	African American	31.43	33.08	17.91	10.67	6.92
	Hispanic	11.58	45.21	18.06	21.43	3.73
	Other	36.39	20.74	34.57	8.30	0.00
	Total Population	12.97	29.05	26.78	21.37	9.83
Respiratory Disorder	White	6.63	19.07	20.15	34.16	19.98
	African American	18.98	34.78	20.36	18.88	7.01
	Hispanic	14.01	27.55	22.29	23.80	12.34
	Other	26.18	24.57	4.75	14.59	29.91
	Total Population	9.09	21.73	20.05	31.10	18.03
Intervertebral Disc Disorder	White	5.99	17.74	17.99	36.07	22.20
	African American	19.32	32.03	25.14	16.32	7.17
	Hispanic	9.90	22.84	13.00	31.36	22.89
	Other	11.12	29.28	23.72	18.02	17.85
	Total Population	7.09	19.08	18.15	34.34	21.34
Diabetes	White	9.79	25.16	25.39	25.06	14.61
	African American	25.63	37.82	18.21	12.54	5.80
	Hispanic	19.06	31.08	17.67	18.38	13.83
	Other	9.21	14.37	28.57	30.21	17.65
	Total Population	13.31	27.59	23.49	22.45	13.17
Hypertension	White	9.53	24.23	22.60	27.42	16.22
	African American	22.87	32.49	20.87	16.15	7.62
	Hispanic	21.24	35.07	19.81	14.87	9.01
	Other	10.35	14.50	17.90	31.75	25.50
	Total Population	12.56	26.12	22.04	24.80	14.48
Arthritis	White	8.72	26.13	23.74	26.10	15.30
	African American	26.61	35.13	19.19	13.72	5.35
	Hispanic	24.43	32.85	15.01	18.07	9.64
	Other	15.46	24.27	14.87	24.34	21.06
	Total Population	11.50	27.38	22.65	24.38	14.10
Chronic Health Conditions Combined	White	8.40	23.48	22.75	28.55	16.82
	African American	23.16	34.90	20.07	15.55	6.32
	Hispanic	18.92	30.39	19.27	20.21	11.20
	Other	17.87	21.06	14.80	23.23	23.05
	Total Population	11.05	25.24	22.34	26.27	15.11

Table 5.
Percentages of Persons with Chronic Health Conditions by Marital Status

Chronic Health Condition	Race/Ethnicity	Marital Status %				
		Married-lvg w/ spouse	Widowed	Divorced	Separated	Never married
Heart Disease	White	63.83	21.47	6.81	1.10	6.79
	African American	42.31	24.64	11.65	6.20	15.19
	Hispanic	54.34	20.68	11.57	2.13	11.27
	Other	57.51	30.30	3.27	2.97	5.95
	Total Population	61.13	21.89	7.48	1.68	7.83
Cerebrovascular Disease	White	61.33	26.48	6.72	0.71	4.76
	African American	44.06	38.89	8.51	5.14	3.41
	Hispanic	59.41	20.77	17.18	0.00	2.64
	Other	58.06	37.52	0.00	4.42	0.00
	Total Population	58.76	28.14	7.35	1.36	4.39
Respiratory Disorder	White	56.58	12.10	9.60	1.78	19.94
	African American	30.53	10.48	14.39	9.22	35.39
	Hispanic	41.48	4.22	9.72	3.83	40.76
	Other	56.89	17.02	1.38	6.29	18.42
	Total Population	52.83	11.45	9.92	2.78	23.01
Intervertebral Disc Disorder	White	75.26	6.92	8.84	2.79	6.19
	African American	54.69	10.12	13.21	11.55	10.42
	Hispanic	74.08	2.98	12.43	4.41	6.10
	Other	44.52	9.48	19.24	0.00	26.76
	Total Population	73.46	6.90	9.50	3.39	6.75
Diabetes	White	64.09	18.17	7.17	1.64	8.92
	African American	42.22	26.51	11.13	9.87	10.25
	Hispanic	68.68	16.97	6.91	2.86	4.57
	Other	67.80	18.76	7.00	0.00	6.44
	Total Population	60.72	19.56	7.85	3.20	8.67
Hypertension	White	62.78	22.28	7.53	1.31	6.10
	African American	43.32	24.16	13.78	8.81	9.93
	Hispanic	58.43	16.34	11.54	4.77	8.91
	Other	75.86	16.50	1.58	2.16	3.91
	Total Population	59.21	22.15	8.80	2.91	6.93
Arthritis	White	59.89	25.50	7.45	1.28	5.88
	African American	37.81	33.11	11.89	7.07	10.12
	Hispanic	52.99	22.92	11.50	4.65	7.94
	Other	58.22	24.59	8.12	5.58	3.50
	Total Population	57.12	26.17	8.15	2.16	6.40
Chronic Health Conditions Combined	White	62.24	20.20	7.71	1.44	8.41
	African American	40.61	25.10	12.52	8.14	13.63
	Hispanic	56.21	15.71	10.76	3.72	13.60
	Other	61.79	21.59	4.99	3.57	8.06
	Total Population	60.46	19.47	8.44	2.50	9.14

Table 6.
Percentages of Persons with Chronic Health Conditions by Employment Status

Chronic Health Condition	Race/Ethnicity	Employment Status % of Employed	Not Employed	Not in Labor Force
Heart Disease	White	27.51	1.54	70.95
	African American	22.71	0.74	76.55
	Hispanic	24.60	1.19	74.20
	Other	30.86	0.00	69.14
	Total Population	26.94	1.42	71.64
Cerebrovascular Disease	White	12.11	0.72	87.17
	African American	5.73	0.68	93.59
	Hispanic	12.00	0.00	88.00
	Other	6.48	0.00	93.52
	Total Population	11.11	0.67	88.23
Respiratory Disorder	White	47.24	3.01	49.75
	African American	43.77	4.88	51.35
	Hispanic	45.16	5.66	49.19
	Other	32.59	3.00	64.41
	Total Population	46.44	3.38	50.18
Intervertebral Disc Disorder	White	52.53	3.99	43.48
	African American	31.96	7.64	60.40
	Hispanic	45.38	5.19	49.42
	Other	54.81	0.00	45.19
	Total Population	50.84	4.23	44.94
Diabetes	White	27.23	1.73	71.05
	African American	25.98	1.23	72.79
	Hispanic	24.59	3.64	71.77
	Other	29.45	3.15	67.40
	Total Population	26.78	1.87	71.36
Hypertension	White	34.03	1.72	64.24
	African American	34.52	1.85	63.63
	Hispanic	30.98	3.62	65.40
	Other	38.48	0.00	61.52
	Total Population	34.02	1.83	64.15
Arthritis	White	29.75	1.45	68.80
	African American	22.04	1.50	76.46
	Hispanic	23.43	2.63	73.94
	Other	33.16	3.30	63.55
	Total Population	28.64	1.55	69.82
Chronic Health Conditions Combined	White	33.43	1.92	64.65
	African American	28.41	2.00	69.59
	Hispanic	29.89	3.31	66.81
	Other	33.75	1.65	64.60
	Total Population	32.11	2.14	65.76

Table 7.
Percentages of Persons with Chronic Health Conditions by Geographic Region

Chronic Health Condition	Race/Ethnicity	Geographic Region % in			
		Northeast	Midwest	South	West
Heart Disease	White	19.97	26.66	36.84	16.53
	African American	16.87	21.83	54.00	7.30
	Hispanic	20.46	11.65	40.90	26.99
	Other	14.72	19.01	21.65	44.63
	Total Population	19.61	25.17	38.51	16.70
Cerebro-vascular Disease	White	18.56	25.39	37.56	18.49
	African American	16.07	23.01	57.66	3.26
	Hispanic	25.38	5.41	31.52	37.69
	Other	8.09	14.44	21.36	56.12
	Total Population	18.37	23.87	39.77	18.00
Respiratory Disorder	White	20.93	25.33	32.22	21.52
	African American	15.15	21.22	53.80	9.84
	Hispanic	19.97	11.24	32.65	36.14
	Other	7.62	15.13	24.23	53.02
	Total Population	19.85	23.30	34.77	22.08
Intervertebral Disc Disorder	White	22.33	23.65	36.42	17.59
	African American	11.05	18.62	58.07	12.26
	Hispanic	16.08	9.57	25.96	48.39
	Other	20.57	27.97	24.83	26.63
	Total Population	21.21	22.48	36.88	19.43
Diabetes	White	17.97	27.51	37.65	16.87
	African American	16.18	16.13	58.74	8.96
	Hispanic	18.74	8.56	35.70	36.99
	Other	5.42	10.11	23.79	60.68
	Total Population	17.47	23.16	40.92	18.45
Hypertension	White	19.56	27.20	36.19	17.05
	African American	14.75	21.73	54.80	8.72
	Hispanic	18.56	9.20	35.64	36.60
	Other	2.13	5.32	22.12	70.43
	Total Population	18.29	24.66	39.29	17.76
Arthritis	White	19.83	26.61	36.13	17.42
	African American	14.10	20.54	56.25	9.10
	Hispanic	19.64	8.59	36.42	35.35
	Other	13.26	14.91	20.77	51.05
	Total Population	19.09	24.79	38.07	18.05
Chronic Health Conditions Combined	White	20.00	26.32	35.78	17.90
	African American	15.09	20.67	55.50	8.74
	Hispanic	19.47	9.83	35.24	35.46
	Other	9.57	13.95	22.44	54.03
	Total Population	19.13	23.92	38.32	18.64

Appendix B

Table 1.
Percentages of Persons with Physical, Sensory, and Language Impairments by Sex

Impairments	Race/Ethnicity	Sex	
		Male %	Female %
Hearing Impairments	White	55.45	44.55
	African American	46.48	53.52
	Hispanic	49.20	50.80
	Other	57.42	42.58
	Total Population	54.55	45.45
Orthopedic Impairments	White	49.95	50.05
	African American	46.94	53.06
	Hispanic	50.15	49.85
	Other	44.84	55.16
	Total Population	49.53	50.47
Visual Impairments	White	55.75	44.25
	African American	50.09	49.91
	Hispanic	61.08	38.92
	Other	58.72	41.28
	Total Population	55.64	44.36
Paralysis	White	52.97	47.03
	African American	51.37	48.63
	Hispanic	43.95	56.05
	Other	49.83	50.17
	Total Population	52.09	47.91
Loss of Extremities	White	76.05	23.95
	African American	62.98	37.02
	Hispanic	80.37	19.63
	Other	100.00	0.00
	Total Population	75.28	24.72
Speech Impairments	White	64.45	35.55
	African American	59.94	40.06
	Hispanic	71.65	28.35
	Other	64.30	35.70
	Total Population	64.07	35.93
Physical, Sensory, and Language Impairments Combined	White	53.02	46.98
	African American	48.95	51.05
	Hispanic	52.45	47.55
	Other	49.90	50.10
	Total Population	58.53	41.47

Table 2.
Percentages of Persons with Physical, Sensory, and Language Impairments by Age

Impairments	Race/Ethnicity	Age				
		Birth-16 years %	17-34 years %	35-54 years %	55-74 years %	Over 74 years %
Hearing Impairments	White	5.72	10.99	22.45	37.81	23.05
	African American	9.73	15.55	24.80	30.30	19.62
	Hispanic	13.98	23.23	19.84	29.60	13.35
	Other	3.67	28.42	28.20	25.61	14.10
	Total Population	6.39	12.31	22.60	36.59	22.11
Orthopedic Impairments	White	2.22	23.58	38.99	25.65	9.56
	African American	4.08	27.17	39.43	23.11	6.20
	Hispanic	5.10	33.13	41.20	16.57	4.00
	Other	5.67	25.34	42.40	23.98	2.61
	Total Population	2.72	24.78	39.30	24.61	8.59
Visual Impairments	White	4.13	17.74	26.17	27.28	24.69
	African American	6.34	12.02	28.31	32.47	20.86
	Hispanic	9.99	22.53	23.80	30.28	13.41
	Other	13.72	20.30	18.04	40.71	7.23
	Total Population	5.05	17.58	26.03	28.36	22.98
Paralysis	White	3.13	7.71	21.49	40.42	27.25
	African American	10.70	11.81	24.73	38.20	14.55
	Hispanic	17.14	18.95	15.68	35.45	12.78
	Other	4.77	5.67	48.86	28.77	11.93
	Total Population	5.14	8.94	22.35	39.46	24.10
Loss of Extremities	White	2.09	16.86	28.58	36.34	16.12
	African American	6.36	16.57	12.81	37.52	26.76
	Hispanic	0.00	21.88	18.98	47.26	11.88
	Other	27.39	23.30	26.13	23.18	0.00
	Total Population	2.74	17.24	26.30	37.00	16.74
Speech Impairments	White	45.28	13.15	14.30	15.20	12.08
	African American	54.40	14.68	12.55	12.58	5.78
	Hispanic	67.65	17.35	3.08	11.94	0.00
	Other	33.56	53.73	0.00	12.71	0.00
	Total Population	48.28	14.32	13.03	14.44	9.92
Physical, Sensory, and Language Impairments Combined	White	4.80	19.08	32.27	28.90	14.95
	African American	9.50	21.67	32.49	25.70	10.65
	Hispanic	9.50	29.19	33.44	21.16	6.72
	Other	7.00	25.03	36.75	25.70	5.53
	Total Population	11.72	15.84	24.94	30.08	17.41

Table 3.
Percentages of Persons with Physical, Sensory, and Language Impairments by Education

Impairments	Race/Ethnicity	Education			
		9-11 years %	12 years completed %	College years %	College graduate %
Hearing Impairments	White	19.07	47.17	21.65	12.10
	African American	30.04	44.39	17.61	7.97
	Hispanic	33.28	42.99	14.90	8.82
	Other	14.58	40.12	29.85	15.45
	Total Population	20.20	46.66	21.34	11.79
Orthopedic Impairments	White	17.31	45.78	24.65	12.27
	African American	25.49	40.97	28.18	5.36
	Hispanic	25.85	39.20	27.23	7.71
	Other	19.93	36.87	32.02	11.17
	Total Population	18.69	44.69	25.32	11.30
Visual Impairments	White	17.29	46.01	23.71	12.99
	African American	38.23	41.92	14.46	5.39
	Hispanic	25.57	40.95	27.20	6.28
	Other	25.11	45.97	18.09	10.83
	Total Population	19.70	45.36	23.03	11.91
Paralysis	White	21.71	45.42	22.80	10.07
	African American	39.39	40.61	13.74	6.27
	Hispanic	27.29	52.07	20.64	0.00
	Other	30.36	37.54	24.29	7.82
	Total Population	24.34	44.83	21.65	9.18
Loss of Extremities	White	16.31	48.28	24.36	11.04
	African American	42.32	41.62	7.57	8.49
	Hispanic	16.87	83.13	0.00	0.00
	Other	27.39	72.61	0.00	0.00
	Total Population	18.49	49.19	21.98	10.34
Speech Impairments	White	22.24	51.24	19.50	7.02
	African American	26.03	59.15	14.82	0.00
	Hispanic	53.68	46.32	0.00	0.00
	Other	51.83	48.17	0.00	0.00
	Total Population	24.53	52.30	17.68	5.49
Physical, Sensory, and Language Impairments Combined	White	17.92	46.22	23.80	12.07
	African American	28.40	42.14	23.83	5.63
	Hispanic	27.00	40.83	24.87	7.30
	Other	20.77	39.27	28.64	11.32
	Total Population	20.99	47.17	21.83	10.00

Table 4.
Percentages of Persons with Physical, Sensory, and Language Impairments by Family Income

Impairments	Race/Ethnicity	Family Income (%)				
		Under $7,000	$7,000-14,000	$15,000-24,999	$25,000-49,999	$50,000 or more
Hearing Impairments	White	7.30	20.08	22.02	33.27	17.34
	African American	19.49	31.92	14.56	25.20	8.82
	Hispanic	18.04	24.85	21.75	22.64	12.71
	Other	8.81	28.97	16.89	18.22	27.10
	Total Population	8.73	21.34	21.39	31.78	16.77
Orthopedic Impairments	White	6.24	19.29	19.46	34.43	20.58
	African American	19.19	31.56	19.14	21.80	8.31
	Hispanic	10.57	30.38	20.33	27.72	11.01
	Other	20.29	22.74	22.43	18.27	16.28
	Total Population	8.21	21.47	19.57	32.23	18.51
Visual Impairments	White	8.36	24.30	21.54	28.78	17.02
	African American	28.97	31.78	18.37	13.53	7.35
	Hispanic	17.73	26.78	16.65	30.04	8.81
	Other	7.98	45.15	20.36	15.11	11.39
	Total Population	11.22	25.65	20.77	27.12	15.24
Paralysis	White	10.22	25.17	28.62	25.42	10.58
	African American	20.54	35.03	16.32	17.01	11.11
	Hispanic	13.98	54.21	5.42	23.61	2.78
	Other	28.81	33.22	12.89	12.16	12.93
	Total Population	12.34	28.74	24.94	23.83	10.16
Loss of Extremities	White	7.21	21.20	23.94	31.81	15.83
	African American	28.66	33.08	23.34	11.53	3.40
	Hispanic	32.10	15.94	21.56	30.40	0.00
	Other	26.13	0.00	50.57	23.30	0.00
	Total Population	10.82	21.77	24.19	29.62	13.59
Speech Impairments	White	7.18	19.23	24.21	31.39	18.01
	African American	23.97	38.51	15.60	17.66	4.26
	Hispanic	11.13	38.11	14.47	32.14	4.15
	Other	15.04	25.04	33.67	26.25	0.00
	Total Population	10.58	23.98	22.19	28.87	14.37
Physical, Sensory, and Language Impairments Combined	White	6.90	20.26	20.89	33.05	18.90
	African American	20.93	32.43	18.11	20.50	8.02
	Hispanic	12.94	30.35	19.23	27.29	10.20
	Other	17.68	25.79	21.46	17.98	17.09
	Total Population	10.32	23.83	22.18	28.91	14.77

Table 5.
Percentages of Persons with Physical, Sensory, and Language Impairments by Marital Status

Impairments	Race/Ethnicity	Marital Status %				
		Married-lvg w/ spouse	Widowed	Divorced	Separated	Never married
Hearing Impairments	White	61.97	18.88	7.39	0.94	10.81
	African American	34.94	26.64	9.99	6.84	21.60
	Hispanic	55.57	14.42	7.84	5.32	16.85
	Other	44.88	17.05	12.93	0.00	25.14
	Total Population	59.45	19.15	7.71	1.53	12.16
Orthopedic Impairments	White	64.81	10.15	10.14	1.63	13.27
	African American	40.51	13.06	15.50	7.91	23.02
	Hispanic	61.87	6.05	11.12	3.18	17.78
	Other	55.51	8.73	11.11	3.44	21.20
	Total Population	61.92	10.08	10.78	2.43	14.80
Visual Impairments	White	59.15	19.06	7.42	1.34	13.03
	African American	23.78	33.06	17.98	7.33	17.85
	Hispanic	51.53	13.37	14.51	3.17	17.42
	Other	51.84	7.75	11.77	0.00	28.64
	Total Population	54.66	19.90	9.17	2.09	14.17
Paralysis	White	55.92	21.69	8.39	1.09	12.90
	African American	40.45	28.65	8.78	6.13	15.99
	Hispanic	42.41	9.13	27.49	0.00	20.97
	Other	46.94	25.02	5.57	0.00	22.47
	Total Population	52.83	22.06	9.40	1.69	14.02
Loss of Extremities	White	67.45	11.84	6.60	0.88	13.23
	African American	48.92	30.36	1.93	11.16	7.62
	Hispanic	52.59	11.94	4.83	5.06	25.58
	Other	72.61	0.00	0.00	0.00	27.39
	Total Population	64.69	13.53	5.93	2.17	13.68
Speech Impairments	White	46.66	13.25	8.21	0.47	31.41
	African American	30.22	24.46	1.84	7.12	36.35
	Hispanic	35.40	0.00	28.28	0.00	36.31
	Other	38.89	0.00	0.00	0.00	61.11
	Total Population	43.20	14.39	7.80	1.59	33.01
Physical, Sensory, and Language Impairments Combined	White	62.89	13.50	9.09	1.39	13.13
	African American	37.70	19.08	13.66	7.63	21.93
	Hispanic	58.58	8.12	11.78	3.34	18.19
	Other	52.67	10.88	10.81	2.20	23.45
	Total Population	56.13	16.52	8.47	1.92	16.97

Table 6.
Percentages of Persons with Physical, Sensory, and Language Impairments by Employment Status

Impairments	Race/Ethnicity	Employment Status % of Employed	Not Employed	Not in Labor Force
Hearing Impairments	White	40.65	2.58	56.77
	African American	38.25	2.92	58.83
	Hispanic	40.22	5.88	53.90
	Other	64.98	0.00	35.02
	Total Population	41.01	2.71	56.28
Orthopedic Impairments	White	54.22	3.84	41.94
	African American	42.44	5.80	51.77
	Hispanic	49.52	4.04	46.44
	Other	59.12	3.03	37.85
	Total Population	52.79	4.03	43.18
Visual Impairments	White	38.38	1.40	60.22
	African American	23.20	2.34	74.45
	Hispanic	35.60	3.36	61.03
	Other	42.00	0.00	58.00
	Total Population	36.62	1.63	61.76
Paralysis	White	19.60	1.99	78.41
	African American	7.10	0.88	92.02
	Hispanic	5.95	0.00	94.05
	Other	29.50	0.00	70.50
	Total Population	17.44	1.68	80.89
Loss of Extremities	White	40.58	0.87	58.55
	African American	20.46	0.00	79.54
	Hispanic	18.61	0.00	81.39
	Other	100.00	0.00	0.00
	Total Population	37.91	0.72	61.37
Speech Impairments	White	28.22	0.85	70.92
	African American	39.40	1.79	58.81
	Hispanic	21.13	10.84	68.02
	Other	23.17	0.00	76.83
	Total Population	29.72	1.41	68.88
Physical, Sensory, and Language Impairments Combined	White	47.24	3.10	49.65
	African American	36.55	4.38	59.07
	Hispanic	44.08	4.05	51.87
	Other	56.90	1.96	41.15
	Total Population	35.92	2.03	62.06

Table 7.
Percentages of Persons with Physical, Sensory, and Language Impairments by Geographic Region

Impairments	Race/Ethnicity	Geographic Region % in			
		Northeast	Midwest	South	West
Hearing Impairments	White	18.20	26.99	34.48	20.32
	African American	9.19	27.01	55.11	8.69
	Hispanic	15.72	11.44	31.85	40.99
	Other	8.18	10.98	17.12	63.73
	Total Population	17.23	25.84	35.40	21.53
Orthopedic Impairments	White	17.60	26.97	30.50	24.93
	African American	14.53	21.60	49.24	14.63
	Hispanic	12.19	5.91	29.49	52.41
	Other	3.55	14.59	17.04	64.82
	Total Population	16.49	24.38	31.96	27.16
Visual Impairments	White	17.32	27.88	35.96	18.85
	African American	16.51	23.47	50.50	9.51
	Hispanic	13.03	6.34	26.55	54.08
	Other	8.48	3.63	11.75	76.14
	Total Population	16.69	25.11	36.25	21.96
Paralysis	White	16.43	25.59	35.12	22.87
	African American	17.63	29.85	46.91	5.61
	Hispanic	24.06	0.00	35.91	40.02
	Other	6.22	21.74	6.32	65.72
	Total Population	16.79	24.50	36.07	22.64
Loss of Extremities	White	18.42	32.17	34.92	14.49
	African American	5.29	11.94	78.16	4.60
	Hispanic	16.70	20.96	32.23	30.11
	Other	0.00	50.57	26.13	23.30
	Total Population	16.70	29.59	39.12	14.59
Speech Impairments	White	18.75	30.61	33.71	16.93
	African American	6.52	25.67	54.06	13.75
	Hispanic	13.03	7.51	35.06	44.39
	Other	0.00	22.57	13.13	64.30
	Total Population	15.79	28.06	37.33	18.82
Physical, Sensory, and Language Impairments Combined	White	17.70	27.27	32.32	22.70
	African American	13.40	23.17	51.10	12.33
	Hispanic	13.38	6.83	30.00	49.79
	Other	4.83	14.12	15.98	65.07
	Total Population	16.62	26.25	36.02	21.12

Appendix C

Table 1.
Percentages of Persons with Nervous Disorders by Sex

Nervous Disorders	Race/Ethnicity	Sex	
		Male %	Female %
Mental Retardation	White	64.17	35.83
	African American	60.29	39.71
	Hispanic	68.93	31.07
	Other	46.44	53.56
	Total Population	63.48	36.52
Cerebral Palsy	White	55.42	44.58
	African American	52.71	47.29
	Hispanic	39.88	60.12
	Other	47.10	52.90
	Total Population	53.81	46.19
Parkinson's Disease	White	49.15	50.85
	African American	100.00	0.00
	Hispanic	26.11	74.89
	Other	0.00	0.00
	Total Population	50.41	49.59
Epilepsy	White	54.04	45.96
	African American	64.42	35.58
	Hispanic	54.13	45.87
	Other	55.47	44.53
	Total Population	55.85	44.15
Multiple Sclerosis	White	30.31	69.69
	African American	43.85	56.15
	Hispanic	0.00	100.00
	Other	0.00	100.00
	Total Population	29.66	70.34
Other Disorders	White	49.48	50.52
	African American	40.51	59.49
	Hispanic	41.56	58.44
	Other	100.00	0.00
	Total Population	48.58	51.42
Nervous Disorders Combined	White	55.62	44.38
	African American	58.10	41.90
	Hispanic	53.16	46.84
	Other	50.55	49.45
	Total Population	50.30	49.70

Table 2.
Percentages of Persons with Nervous Disorders by Age

Nervous Disorders	Race/Ethnicity	Age				
		Birth-16 years %	17-34 years %	35-54 years %	55-74 years %	Over 74 years %
Mental Retardation	White	50.32	30.03	15.10	3.55	1.01
	African American	61.23	23.47	10.67	3.86	0.77
	Hispanic	55.54	31.42	9.69	3.35	0.00
	Other	45.15	39.07	15.77	0.00	0.00
	Total Population	52.83	29.01	13.78	3.53	0.86
Cerebral Palsy	White	3.02	8.58	22.22	38.42	27.75
	African American	9.45	11.60	23.11	40.58	15.27
	Hispanic	20.22	22.36	18.51	26.84	12.07
	Other	5.03	5.98	51.52	24.88	12.58
	Total Population	5.05	9.79	23.02	37.58	24.56
Parkinson's Disease	White	0.91	0.00	0.48	42.91	55.71
	African American	0.00	0.00	0.00	64.81	35.20
	Hispanic	0.00	0.00	0.00	100.00	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	0.84	0.00	0.44	45.94	52.78
Epilepsy	White	19.21	29.09	31.92	16.06	3.73
	African American	16.62	18.83	30.74	27.03	6.79
	Hispanic	51.46	21.44	24.54	0.00	2.57
	Other	36.59	11.51	31.24	20.65	0.00
	Total Population	22.20	26.22	31.01	16.52	4.05
Multiple Sclerosis	White	0.00	12.83	60.24	19.01	7.93
	African American	0.00	45.40	26.18	28.42	0.00
	Hispanic	0.00	19.22	80.78	0.00	0.00
	Other	0.00	0.00	100.00	0.00	0.00
	Total Population	0.00	16.36	58.36	18.68	6.60
Other Disorders	White	2.18	3.73	12.64	44.18	37.28
	African American	0.00	20.66	20.36	16.65	42.33
	Hispanic	0.00	0.00	45.01	35.34	19.64
	Other	100.00	0.00	0.00	0.00	0.00
	Total Population	3.03	5.64	15.10	39.68	36.56
Nervous Disorders Combined	White	20.83	18.51	21.40	22.84	16.42
	African American	32.33	19.79	18.91	20.09	8.88
	Hispanic	39.53	23.61	19.93	12.37	4.55
	Other	29.09	16.75	34.53	14.59	5.04
	Total Population	14.00	14.50	23.62	26.98	20.90

Table 3.
Percentages of Persons with Nervous Disorders by Education

Nervous Disorders	Race/Ethnicity	Education			
		9-11 years %	12 years completed %	College years %	College graduate %
Mental Retardation	White	57.34	37.30	5.36	0.00
	African American	64.05	35.95	0.00	0.00
	Hispanic	65.42	34.58	0.00	0.00
	Other	46.45	24.96	28.59	0.00
	Total Population	58.59	36.64	4.76	0.00
Cerebral Palsy	White	22.57	43.76	24.57	9.10
	African American	39.36	42.78	10.28	7.57
	Hispanic	37.00	35.01	27.99	0.00
	Other	30.36	37.54	24.29	7.82
	Total Population	25.35	43.14	22.93	8.58
Parkinson's Disease	White	17.26	45.45	25.36	11.94
	African American	48.83	18.82	0.00	32.35
	Hispanic	0.00	0.00	0.00	100.00
	Other	0.00	0.00	0.00	0.00
	Total Population	18.40	43.57	23.84	14.19
Epilepsy	White	21.49	45.30	27.74	5.48
	African American	56.94	38.77	4.29	0.00
	Hispanic	34.47	36.97	28.55	0.00
	Other	49.26	0.00	50.74	0.00
	Total Population	27.44	43.35	24.95	4.27
Multiple Sclerosis	White	15.94	41.73	32.63	9.70
	African American	0.00	72.25	21.34	6.40
	Hispanic	0.00	47.62	0.00	52.38
	Other	100.00	0.00	0.00	0.00
	Total Population	13.98	45.47	28.96	11.59
Other Disorders	White	17.81	41.81	18.71	21.67
	African American	31.55	39.13	17.32	12.00
	Hispanic	25.64	23.24	51.12	0.00
	Other	0.00	0.00	0.00	0.00
	Total Population	19.71	40.85	19.67	19.77
Nervous Disorders Combined	White	26.76	42.75	21.96	8.54
	African American	44.07	41.98	8.45	5.50
	Hispanic	39.87	34.97	18.83	6.33
	Other	38.66	29.45	26.78	5.11
	Total Population	27.25	42.17	20.85	9.73

Table 4.
Percentages of Persons with Nervous Disorders by Family Income

Nervous Disorders	Race/Ethnicity	Family Income %				
		Under $7,000	$7,000-14,000	$15,000-24,999	$25,000-49,999	$50,000 or more
Mental Retardation	White	6.23	20.14	24.69	25.08	23.86
	African American	12.50	45.72	18.97	15.39	7.43
	Hispanic	6.12	27.87	23.52	24.67	17.82
	Other	17.31	34.53	9.55	9.02	29.60
	Total Population	7.62	26.00	23.20	22.90	20.28
Cerebral Palsy	White	10.90	24.38	28.71	25.55	10.45
	African American	20.41	40.08	10.38	18.57	10.57
	Hispanic	16.73	51.76	6.48	21.70	3.32
	Other	30.72	35.41	7.13	12.96	13.79
	Total Population	13.06	28.51	24.31	24.06	10.07
Parkinson's Disease	White	7.60	21.65	30.94	28.53	11.28
	African American	0.00	68.46	0.00	31.54	0.00
	Hispanic	0.00	64.36	35.64	0.00	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	6.96	25.43	29.78	27.50	10.32
Epilepsy	White	7.34	32.95	17.45	29.59	12.67
	African American	27.36	50.48	16.40	5.77	0.00
	Hispanic	10.64	44.93	23.41	17.64	3.37
	Other	26.73	44.05	29.22	0.00	0.00
	Total Population	11.05	36.94	18.15	24.25	9.61
Multiple Sclerosis	White	6.60	9.61	20.69	40.74	22.37
	African American	0.00	14.75	46.13	39.12	0.00
	Hispanic	0.00	21.44	0.00	60.37	18.19
	Other	0.00	0.00	0.00	100.00	0.00
	Total Population	5.31	10.92	21.79	42.67	19.31
Other Disorders	White	7.92	27.34	33.09	14.03	17.62
	African American	6.37	45.20	7.09	22.27	19.07
	Hispanic	7.30	12.83	24.55	41.43	13.89
	Other	100.00	0.00	0.00	0.00	0.00
	Total Population	9.14	28.66	28.31	16.55	17.34
Nervous Disorders Combined	White	8.03	23.97	25.38	26.09	16.54
	African American	15.96	44.53	16.29	15.92	7.31
	Hispanic	9.32	37.11	18.83	24.30	10.45
	Other	29.39	33.79	11.83	10.48	14.52
	Total Population	8.86	26.07	24.25	26.32	14.49

Table 5.
Percentages of Persons with Nervous Disorders by Marital Status

Nervous Disorders	Race/Ethnicity	Marital Status %				
		Married-lvg w/ spouse	Widowed	Divorced	Separated	Never married
Mental Retardation	White	6.29	0.64	3.19	0.31	89.56
	African American	2.29	1.79	1.39	0.00	[illegible]
	Hispanic	10.43	0.00	0.00	0.00	[illegible]
	Other	0.00	0.00	0.00	0.00	100.00
	Total Population	5.84	0.77	2.56	0.23	90.61
Cerebral Palsy	White	54.83	21.25	8.93	0.76	14.24
	African American	39.70	27.31	8.72	6.44	17.83
	Hispanic	36.95	7.43	29.92	0.00	25.69
	Other	49.63	20.72	5.89	0.00	23.76
	Total Population	51.71	21.32	9.90	1.46	15.61
Parkinson's Disease	White	62.47	26.65	8.00	0.00	2.88
	African American	77.93	22.07	0.00	0.00	0.00
	Hispanic	35.64	64.36	0.00	0.00	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	62.38	27.50	7.44	0.00	2.68
Epilepsy	White	46.46	5.95	7.85	2.95	36.78
	African American	30.90	12.50	16.81	7.80	31.99
	Hispanic	42.72	0.00	4.27	14.13	38.89
	Other	18.16	32.57	0.00	0.00	49.27
	Total Population	42.97	7.16	9.03	4.53	36.31
Multiple Sclerosis	White	67.25	16.64	6.20	1.22	8.69
	African American	65.83	0.00	12.96	10.19	11.02
	Hispanic	80.78	0.00	0.00	0.00	19.22
	Other	100.00	0.00	0.00	0.00	0.00
	Total Population	68.18	13.85	6.47	2.04	9.45
Other Disorders	White	58.97	21.59	3.93	1.49	14.02
	African American	27.02	37.97	11.87	2.20	20.94
	Hispanic	56.22	19.64	0.00	0.00	24.13
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	54.65	23.63	4.76	1.50	15.46
Nervous Disorders Combined	White	43.33	13.53	6.55	1.11	35.47
	African American	26.90	15.70	8.80	4.46	44.14
	Hispanic	33.19	5.59	8.79	3.20	49.23
	Other	31.31	16.59	2.97	0.00	49.12
	Total Population	47.62	15.70	6.69	1.63	28.35

Table 6.
Percentages of Persons with Nervous Disorders by Employment Status

Nervous Disorders	Race/Ethnicity	Employment Status % of Employed	Not Employed	Not in Labor Force
Mental Retardation	White	28.58	2.91	68.50
	African American	10.12	2.72	87.16
	Hispanic	38.60	0.00	61.40
	Other	32.99	0.00	67.01
	Total Population	26.34	2.63	71.03
Cerebral Palsy	White	20.83	2.35	76.81
	African American	7.31	1.06	91.63
	Hispanic	7.29	0.00	92.71
	Other	31.20	0.00	68.80
	Total Population	18.65	1.98	79.37
Parkinson's Disease	White	8.15	0.00	91.85
	African American	12.84	0.00	87.16
	Hispanic	0.00	0.00	100.00
	Other	0.00	0.00	0.00
	Total Population	8.04	0.00	91.96
Epilepsy	White	38.14	3.30	58.55
	African American	15.20	3.53	81.27
	Hispanic	18.10	13.46	68.44
	Other	16.43	18.16	65.42
	Total Population	32.28	4.24	63.48
Multiple Sclerosis	White	30.96	0.00	69.04
	African American	44.57	0.00	55.43
	Hispanic	19.22	0.00	80.78
	Other	0.00	0.00	100.00
	Total Population	31.37	0.00	68.63
Other Disorders	White	21.02	0.80	78.18
	African American	10.74	5.89	83.38
	Hispanic	10.64	0.00	89.36
	Other	0.00	0.00	0.00
	Total Population	19.13	1.43	79.44
Nervous Disorders Combined	White	25.21	2.09	72.70
	African American	12.32	2.54	85.14
	Hispanic	17.75	2.96	79.29
	Other	27.56	3.74	68.70
	Total Population	22.63	2.57	75.65

Table 7.
Percentages of Persons with Nervous Disorders by Geographic Region

Nervous Disorders	Race/Ethnicity	Geographic Region % in Northeast	Midwest	South	West
Mental Retardation	White	20.95	32.53	33.26	13.26
	African American	14.43	19.21	54.12	12.25
	Hispanic	26.57	13.48	30.61	29.34
	Other	8.10	31.13	14.58	46.20
	Total Population	19.90	28.24	36.84	15.02
Cerebral Palsy	White	16.48	25.65	35.73	22.14
	African American	17.29	34.99	42.91	4.81
	Hispanic	25.39	0.00	30.39	44.22
	Other	6.56	22.93	6.66	63.85
	Total Population	16.84	25.26	35.49	22.41
Parkinson's Disease	White	26.37	22.58	33.72	17.32
	African American	22.07	25.56	52.37	0.00
	Hispanic	0.00	0.00	52.84	47.16
	Other	0.00	0.00	0.00	0.00
	Total Population	25.21	21.87	35.21	17.71
Epilepsy	White	18.05	27.19	31.59	23.17
	African American	10.81	6.38	71.51	11.30
	Hispanic	25.34	2.63	26.78	45.25
	Other	22.21	25.69	0.00	52.10
	Total Population	17.60	21.32	37.19	23.90
Multiple Sclerosis	White	20.26	28.85	31.40	19.49
	African American	5.44	30.75	37.15	26.66
	Hispanic	58.85	0.00	0.00	41.15
	Other	0.00	100.00	0.00	0.00
	Total Population	20.79	28.04	29.89	21.28
Other Disorders	White	23.27	22.39	40.84	13.51
	African American	34.55	26.98	36.29	2.18
	Hispanic	10.24	11.89	32.29	45.57
	Other	0.00	0.00	100.00	0.00
	Total Population	23.75	22.15	40.58	13.52
Nervous Disorders Combined	White	19.74	27.80	34.26	18.21
	African American	15.57	21.17	53.42	9.84
	Hispanic	25.47	6.69	29.18	38.66
	Other	10.04	26.46	12.33	51.17
	Total Population	20.68	24.48	35.86	18.97

Appendix D

Table 1.

Percentages of Persons with Mental Disorders by Sex

Mental Disorders	Race/Ethnicity	Sex	
		Male %	Female %
Schizophrenic	White	64.07	35.93
	African American	93.41	6.59
	Hispanic	75.50	24.50
	Other	100.00	0.00
	Total Population	70.87	29.13
Affective Psychosis	White	33.44	66.56
	African American	21.06	78.94
	Hispanic	16.44	83.56
	Other	0.00	0.00
	Total Population	31.15	68.85
Other Psychosis	White	47.16	52.84
	African American	46.23	53.77
	Hispanic	29.88	70.12
	Other	49.89	50.11
	Total Population	45.60	54.40
Mental Disorders Combined	White	48.44	51.56
	African American	63.80	36.20
	Hispanic	47.82	52.18
	Other	68.61	31.39
	Total Population	49.21	50.79

Table 2.

Percentages of Persons with Mental Disorders by Age

Mental Disorders	Race/Ethnicity	Age				
		Birth-16 years %	17-34 years %	35-54 years %	55-74 years %	Over 74 years %
Schizophrenic	White	1.55	29.79	47.56	19.58	1.53
	African American	0.00	52.11	37.32	10.57	0.00
	Hispanic	0.00	4.11	51.83	44.06	0.00
	Other	0.00	100.00	0.00	0.00	0.00
	Total Population	1.09	31.49	45.75	20.62	1.07
Affective Psychosis	White	0.00	19.28	57.63	19.79	3.31
	African American	0.00	6.52	50.71	42.77	0.00
	Hispanic	0.00	51.63	31.93	16.44	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	0.00	20.90	55.06	21.25	2.79
Other Psychosis	White	9.09	11.43	26.36	22.17	30.95
	African American	20.32	27.18	24.31	14.97	13.21
	Hispanic	46.16	18.63	0.00	35.21	0.00
	Other	50.11	0.00	0.00	49.89	0.00
	Total Population	15.30	14.70	23.12	22.59	24.28
Mental Disorders Combined	White	3.12	20.90	45.18	20.38	10.42
	African American	7.71	35.28	34.54	17.45	5.01
	Hispanic	12.18	20.52	32.89	34.41	0.00
	Other	31.39	37.36	0.00	31.25	0.00
	Total Population	5.46	22.36	41.31	21.49	9.38

Table 3.

Percentages of Persons with Mental Disorders by Education

Mental Disorders	Race/Ethnicity	Education			
		9-11 years %	12 years completed %	College years %	College graduate %
Schizophrenic	White	19.85	40.94	28.41	10.80
	African American	16.57	63.90	19.52	0.00
	Hispanic	0.00	42.96	57.04	0.00
	Other	0.00	0.00	100.00	0.00
	Total Population	17.63	44.60	29.79	7.98
Affective Psychosis	White	15.03	49.00	30.37	5.61
	African American	45.73	22.97	31.30	0.00
	Hispanic	0.00	21.75	78.25	0.00
	Other	0.00	0.00	0.00	0.00
	Total Population	16.83	44.90	33.53	4.74
Other Psychosis	White	24.61	53.44	15.59	6.36
	African American	35.65	51.97	12.38	0.00
	Hispanic	100.00	0.00	0.00	0.00
	Other	0.00	0.00	0.00	0.00
	Total Population	31.20	49.97	14.06	4.78
Mental Disorders Combined	White	18.96	46.71	26.49	7.84
	African American	28.20	51.67	20.13	0.00
	Hispanic	20.00	26.80	53.20	0.00
	Other	0.00	0.00	100.00	0.00
	Total Population	21.89	46.49	25.80	5.83

Table 4.

Percentages of Persons with Mental Disorders by Family Income

Mental Disorders	Race/Ethnicity	Family Income %				
		Under $7,000	$7,000-14,000	$15,000-24,999	$25,000-49,999	$50,000 or more
Schizophrenic	White	13.73	35.39	20.56	20.87	9.45
	African American	22.97	36.18	9.24	22.01	9.59
	Hispanic	39.84	44.45	0.00	15.71	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	17.90	36.34	16.44	20.66	8.66
Affective Psychosis	White	21.83	20.12	20.38	27.68	9.99
	African American	35.07	64.93	0.00	0.00	0.00
	Hispanic	43.35	19.15	19.81	17.69	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	24.28	22.91	9.04	25.16	8.61
Other Psychosis	White	12.84	20.86	28.02	22.74	15.54
	African American	22.48	31.11	26.34	20.07	0.00
	Hispanic	19.36	62.01	18.63	0.00	0.00
	Other	0.00	50.11	49.89	0.00	0.00
	Total Population	15.06	28.00	27.37	19.19	10.36
Mental Disorders Combined	White	16.61	25.73	22.43	23.97	11.25
	African American	24.43	38.19	14.38	18.29	4.70
	Hispanic	33.83	43.25	12.02	10.90	0.00
	Other	0.00	50.11	49.89	0.00	0.00
	Total Population	19.08	29.08	20.95	21.67	9.21

Table 5.

Percentages of Persons with Mental Disorders by Marital Status

Mental Disorders	Race/Ethnicity	Marital Status %				
		Married-lvg w/ spouse	Widowed	Divorced	Separated	Never married
Schizophrenic	White	23.55	3.17	24.46	4.96	43.87
	African American	30.48	3.54	8.42	5.50	52.06
	Hispanic	44.00	0.00	41.50	0.00	14.51
	Other	0.00	0.00	0.00	0.00	100.00
	Total Population	26.76	2.85	23.24	4.45	42.70
Affective Psychosis	White	54.26	3.31	19.11	6.47	16.85
	African American	13.40	19.80	0.00	19.26	47.54
	Hispanic	33.43	0.00	16.03	50.54	0.00
	Other	0.00	0.00	0.00	0.00	0.00
	Total Population	49.51	4.29	17.43	10.95	17.82
Other Psychosis	White	35.20	31.83	14.50	1.99	16.47
	African American	15.88	17.74	13.75	14.48	38.15
	Hispanic	34.60	29.44	35.95	0.00	0.00
	Other	0.00	100.00	0.00	0.00	0.00
	Total Population	31.27	30.21	15.31	4.05	19.16
Mental Disorders Combined	White	37.88	10.78	19.88	4.73	26.74
	African American	22.70	11.04	8.69	10.85	46.71
	Hispanic	39.15	4.91	32.66	15.71	7.58
	Other	0.00	45.55	0.00	0.00	54.45
	Total Population	35.85	12.45	18.66	6.48	26.56

Table 6.

Percentages of Persons with Mental Disorders by Employment Status

Mental Disorders	Race/Ethnicity	Employment Status % of Employed	Not Employed	Not in Labor Force
Schizophrenic	White	17.49	1.56	80.95
	African American	12.46	0.00	87.54
	Hispanic	0.00	9.56	90.44
	Other	0.00	0.00	100.00
	Total Population	14.38	2.20	83.42
Affective Psychosis	White	23.88	4.48	71.64
	African American	0.00	0.00	100.00
	Hispanic	0.00	14.69	85.31
	Other	0.00	0.00	0.00
	Total Population	20.17	4.95	74.87
Other Psychosis	White	35	0.00	87.65
	African American	0.00	4.38	95.62
	Hispanic	0.00	0.00	100.00
	Other	0.00	0.00	100.00
	Total Population	9.53	0.70	89.77
Mental Disorders Combined	White	18.48	2.22	79.30
	African American	6.43	1.32	92.25
	Hispanic	0.00	9.56	90.44
	Other	0.00	0.00	100.00
	Total Population	14.69	2.62	82.68

Table 7.

Percentages of Persons with Mental Disorders by Geographic Region

Mental Disorders	Race/Ethnicity	Geographic Region % in			
		Northeast	Midwest	South	West
Schizophrenic	White	15.16	33.16	21.06	30.62
	African American	17.67	18.90	43.87	19.56
	Hispanic	29.47	4.11	43.66	22.76
	Other	0.00	0.00	0.00	100.00
	Total Population	17.07	26.98	27.37	28.57
Affective Psychosis	White	19.72	23.71	29.26	27.31
	African American	22.97	6.52	63.98	6.54
	Hispanic	16.03	16.98	0.00	66.99
	Other	0.00	0.00	0.00	0.00
	Total Population	19.67	21.88	29.54	28.91
Other Psychosis	White	11.56	27.04	26.39	35.01
	African American	9.78	29.97	52.98	7.28
	Hispanic	19.36	0.00	31.61	49.04
	Other	0.00	0.00	0.00	100.00
	Total Population	11.60	24.66	31.15	32.59
Mental Disorders Combined	White	15.77	28.08	25.47	30.68
	African American	15.53	21.10	50.58	12.79
	Hispanic	23.24	6.44	28.92	41.41
	Other	0.00	0.00	0.00	100.00
	Total Population	16.11	24.51	29.35	30.02